



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**THE EFFECTS-BASED APPROACH TO OPERATIONS
AND THE FUTURE OF ARMY DOCTRINE**

by

James A. Mattox

December 2006

Thesis Advisor:
Second Reader:

Peter J. Gustaitis
Frank R. Giordano

Approved for public release; distribution is unlimited

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE December 2006	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. TITLE AND SUBTITLE The Effects-Based Approach to Operations and the Future of Army Doctrine			5. FUNDING NUMBERS	
6. AUTHOR(S) James A. Mattox				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words) <p>This thesis addresses the implications of the Effects-Based Approach to Operations (EBAO) concept on U.S. Army doctrine. EBAO has the potential to radically change the Joint concept of warfare if one considers it as a more holistic approach to planning and conducting operations. Despite the Army's resistance to apply EBAO below the Corps level, numerous case studies from Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) exist to prove otherwise and demonstrate how EBAO can be integrated into Army doctrine. This thesis begins by reviewing the evolution of EBAO from its inception during Desert Storm through Millennium Challenge 2002 (MC02) to its present form. Next, it compares Army doctrine to the current EBAO concept and identifies potential shortfalls and conflicts between the two. By addressing the major shortfalls or conflicts, this thesis answers the question of whether or not EBAO has a role in future Army doctrine. Finally, recommendations are made in the form of doctrine, organization, training, materiel, leadership, personnel, and facilities (DOTMLPF) as to how EBAO should be implemented into Army doctrine and what the implications of this application would be to the Army organization.</p>				
14. SUBJECT TERMS Effects-Based Operations, Effects-Based Approach to Operations, Effects-Based Thinking, Future Army Doctrine, Army Operational Concept, System of System Analysis, Effects, Joint Doctrine			15. NUMBER OF PAGES 77	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL	

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. Z39-18

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited

**THE EFFECTS-BASED APPROACH TO OPERATIONS AND
THE FUTURE OF ARMY DOCTRINE**

James A. Mattox
Major, United States Army
B.A., Oklahoma State University, 1995

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN DEFENSE ANALYSIS

from the

**NAVAL POSTGRADUATE SCHOOL
December 2006**

Author: James A. Mattox

Approved by: Peter J. Gustaitis
Thesis Advisor

Frank R. Giordano
Second Reader

Gordon McCormick
Chairman, Department of Defense Analysis

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

This thesis addresses the implications of the Effects-Based Approach to Operations (EBAO) concept on U.S. Army doctrine. EBAO has the potential to radically change the Joint concept of warfare if one considers it as a more holistic approach to planning and conducting operations. Despite the Army's resistance to apply EBAO below the Corps level, numerous case studies from Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) exist to prove otherwise and demonstrate how EBAO can be integrated into Army doctrine. This thesis begins by reviewing the evolution of EBAO from its inception during Desert Storm through Millennium Challenge 2002 (MC02) to its present form. Next, it compares Army doctrine to the current EBAO concept and identifies potential shortfalls and conflicts between the two. By addressing the major shortfalls or conflicts, this thesis answers the question of whether or not EBAO has a role in future Army doctrine. Finally, recommendations are made in the form of doctrine, organization, training, materiel, leadership, personnel, and facilities (DOTMLPF) as to how EBAO should be implemented into Army doctrine and what the implications of this application would be to the Army organization.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I.	THE EFFECTS-BASED APPROACH TO OPERATIONS.....	1
A.	INTRODUCTION.....	1
B.	BACKGROUND	2
C.	WHY EBO?	5
D.	TENETS OF EBA	5
E.	EFFECTS-BASED APPROACH TO PLANNING	7
F.	EFFECTS-BASED APPROACH TO EXECUTION	10
G.	EFFECTS-BASED APPROACH TO ASSESSMENT	10
H.	SUMMARY	11
II.	ARMY OPERATIONAL DOCTRINE.....	13
A.	INTRODUCTION.....	13
B.	HISTORY OF ARMY OPERATIONS DOCTRINE	13
C.	BASICS OF CURRENT ARMY OPERATIONS DOCTRINE	14
D.	FUTURE ARMY DOCTRINE AND JOINT OPERATIONS.....	18
E.	SUMMARY	20
III.	POTENTIAL SHORTFALLS AND CONFLICTS TO INCLUDING EBAO IN ARMY DOCTRINE	21
A.	INTRODUCTION.....	21
B.	MISINTERPRETATIONS OF EBAO	22
C.	IS EBAO REALLY NECESSARY	24
D.	INAPPLICABLE AT TACTICAL LEVELS OF OPERATION	24
E.	INCOMPATIBILITY WITH CERTAIN SYSTEMS	25
F.	UNCERTAIN MEASURES OF SUCCESS.....	26
G.	CULTURAL RESISTANCE	27
H.	LACK OF ORGANIZATIONAL STRUCTURE	27
I.	LACK OF LEADER EDUCATION	28
J.	SUMMARY	28
IV.	REVEALING THE MISCONCEPTIONS	31
A.	INTRODUCTION.....	31
B.	EBAO AS A REQUIREMENT.....	31
C.	THE TRUE DEFINITION OF EBAO	32
D.	A NEEDED FOCUS TO DOCTRINE	35
E.	APPLICABILITY TO ALL LEVELS OF WARFARE.....	36
F.	A METHOD FOR ALL SYSTEMS	38
G.	BROADENED MEASURES OF SUCCESS	39
H.	CHANGING THE CULTURE	40
I.	ACCEPTABLE ORGANIZATIONAL STRUCTURES	41
J.	EDUCATING THE FUTURE LEADERS AND STAFF	42
K.	SUMMARY	43
V.	RECOMMENDATIONS AND CONCLUSION.....	45

A.	INTRODUCTION.....	45
B.	DOCTRINE.....	45
C.	ORGANIZATION	48
D.	TRAINING	49
E.	MATERIEL.....	50
F.	LEADERSHIP	50
G.	PERSONNEL	51
H.	FACILITIES	52
I.	FURTHER RECOMMENDED STUDY AND RESEARCH	52
J.	CONCLUSION	52
LIST OF REFERENCES		55
INITIAL DISTRIBUTION LIST		59

LIST OF FIGURES

Figure 1.	Systems Perspective of the Operational Environment.....	6
Figure 2.	Course of Action Determination Process.....	9

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF ACRONYMS AND ABBREVIATIONS

ABCS	Army Battle Command System
AO	Area of Operation
AOR	Area of Responsibility
ARCIC	Army Capabilities Integration Center
AWC	Army War College
BCTP	Battle Command Training Program
BOLC	Basic Officer Leadership Course
C2	Command and Control
CALL	Center for Army Lessons Learned
CC	Critical Capabilities
CCC	Captains Career Course
CGSC	Command and General Staff College
CJCS	Chairman of the Joint Chiefs of Staff
CJTF	Combined Joint Task Force
COA	Course of Action
COG	Center of Gravity
COL	Colonel
CR	Critical Requirements
CSA	Chief of Staff of the Army
CV	Critical Vulnerabilities
DIME	Diplomatic, Information, Military, Economic
DOTMLPF	Doctrine, Organization, Training, Materiel, Leadership, Personnel, and Facilities
EAC	Effects Assessment Cell
EBA	Effects-Based Approach
EBAO	Effects-Based Approach to Operations
EBO	Effects-Based Operations
ECOORD	Effects Coordinator
ETO	Effects Tasking Order
EWG	Effects Working Group
FECC	Fire and Effects Coordination Cell
FM	Field Manual
FMI	Field Manual Interim
FSCOORD	Fire Support Coordinator
FSE	Fire Support Element

GFM	Global Force Management
GWOT	Global War on Terrorism
IIR	Initial Impression Report
ILE	Intermediate Level Education
JACD	Joint and Army Concepts Division
JFC	Joint Forces Commander
JIM	Joint, Interagency and Multinational
JIPB	Joint Intelligence Preparation of the Battlefield
JOPP	Joint Operations Planning Process
JP	Joint Publication
JPME	Joint Professional Military Education
JRTC	Joint Readiness Training Center
JTF	Joint Task Force
JWFC	Joint Warfighting Center
MC02	Millennium Challenge 2002
MDMP	Military Decision-Making Process
METL	Mission Essential Task List
MOE	Measure of Effectiveness
MOP	Measure of Performance
NCO	Non-Commissioned Officer
NDS	National Defense Strategy
NTC	National Training Center
OBC	Officer Basic Course
OE	Operational Environment
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
ONA	Operational Net Assessment
OPLAN	Operation Plan
OPORD	Operation Order
PEL	Priority Effects List
PMESII	Political, Military, Economic, Social, Infrastructure, and Information
RFC	Revision Final Coordination
SAE	Special Area of Emphasis
SJFHQ(CE)	Standing Joint Forces Headquarters (Core Element)
SoSA	System-of-Systems Analysis

TLP	Troop Leading Procedures
TTP	Tactics, Techniques and Procedures
TRADOC	Training and Doctrine Command
UN	United Nations
USJFCOM	United States Joint Forces Command

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

The author would like to thank the numerous people who helped in bringing this thesis into being. First, he would like to thank Colonel (Retired) Peter J. Gustaitis for his constant advice and patience through the months and Brigadier General (Retired) Frank R. Giordano for his comments and editing of the finished work. Special acknowledgement goes out to the many subject matter experts at the U.S. Joint Forces Command and the Army Capabilities Integration Center, namely Lieutenant Colonel Rhett Russell, Lieutenant Colonel Brad Borman, Commander Malcom Potts, Mr. Graham Kessler, Colonel (Retired) Stephen Runals, Colonel (Retired) Bill Shugrue, and Colonel Steve Bullimore. Their insights, knowledge and experience provided an immeasurable amount of information and clarity to this thesis. Thanks to Lieutenant Colonel Dallas Eubanks, a great mentor and friend who pointed me in the direction of effects-based operations as a thesis subject. Lastly, and definitely not least, I would like to thank my wife who has stood by my side through thick and thin from the beginning of my Army career. Without her, my life would not be complete. Thanks for your support and putting up with copy editing all of my papers to include this thesis.

THIS PAGE INTENTIONALLY LEFT BLANK

I. THE EFFECTS-BASED APPROACH TO OPERATIONS

A. INTRODUCTION

Change is difficult to deal with, especially when the methods used in the past have become widely accepted and institutionalized. According to Darwin's theory of evolution, also known as the "survival of the fittest," as with all things in nature, when the environment changes, the elements in that environment must change or risk succumbing to their surroundings and perishing.¹ Both the post-Cold War and post-9/11 world have introduced major changes to the operational environment (OE) that the United States, specifically the military, must face. No longer is there a superpower threat against the U.S. or a large-scale, purely conventional conflict on the horizon. Today's adversaries are not composed of military-style maneuver organizations. Now, the enemy is organized globally, regionally and locally through a web of networked connections that make their identification more difficult. These threats are no longer strictly military, but span the spectrum of political, military, economic, social, infrastructure and information (PMESII) spheres within this new OE. The new threat calls for the U.S. military to transform the way it projects national power, protects vital interests of the U.S. and employs military power. Methods for dealing with this new danger have been realized in the conception of effects-based operations (EBO) and through the progression of EBO to an effects-based approach (EBA) to joint operations. This concept has been in development and gradual use over the past fifteen years at the strategic and operational levels of war and most recently has been utilized, perhaps unofficially, at the tactical level in Iraq and Afghanistan. The Army's resistance to recognize the importance of EBA and include it in its service doctrine is an issue. In this thesis, I address the implications of the EBA to Army operational doctrine. In doing so, I initially review the idea of EBA and its key tenets and examine the current Army operational doctrine in order to compare the two for compatibility and inclusiveness. Next, I identify potential shortfalls and conflicts between the two ways of thinking and answer the question of whether or not

¹ Charles Darwin, "The Origin of Species," in *The Harvard Classics*, ed. Charles Eliot (New York: P.F. Collier & Son Corporation, 1956), 87.

EBA has a role in future Army doctrine. In doing so, I will identify some of the reasons why the Army has been apprehensive about accepting EBA and will refute them to show that EBA has a place in Army doctrine. Finally, I will make recommendations on how EBA can be implemented into current Army doctrine. Both the initial concept of EBO and its successor, EBA, are examples of needed change in Army operations that signify the joint forces adaptation to the changing environment. The Army's failure to embrace EBA at all levels of war, to include tactical, is in contradiction to many of the lessons learned from current operations in Operation Iraqi Freedom and Operation Enduring Freedom. Army forces from company to corps have included EBA into their decision-making and planning procedures in light of the multidimensional operational environment they find themselves.² Also, influential training units within the Army have published a number of handbooks on how to include EBA into current operations. The continued refinement and acceptance of these ideas by the joint community and individual services, similar to the evolution of the Combined Joint Task Force (CJTF) concept, will lead to a more effective and efficient use of military power in conjunction with the other elements of national power – diplomatic, information, and economic.

B. BACKGROUND

The reasoning and thought process behind EBO has been present throughout the history of warfare, but in a more unorganized and intuitive way. From some of the earliest recollections of warfare when armies were directly led by monarchs and aristocracy, the coupling of political and military strategy was less difficult to obtain. Leaders such as Frederick the Great of Prussia and Napoleon Bonaparte of France were the kings, prime ministers, and field commanders of their respective countries, leaving the development and projection of national strategy to a single entity and alleviating the possibility of different interpretations of that strategy.³ The evolving complexity of warfare led to a separation between political and military leaders, which occurred predominantly in the last two centuries. This evolution arguably began during the

² CALL Handbook No. 04-14, *Effects-Based Operations: Brigade to Company Level* (Fort Leavenworth, Kansas: Center for Army Lessons Learned, July 2004), iii.

³ Williamson Murray and Kevin Woods, *Thoughts on Effects-Based Operations, Strategy, and the Conduct of War*, IDA Paper P-3869 (Alexandria: Institute for Defense Analyses, January, 2004), 27.

American Civil War. For the first two years of the war, President Abraham Lincoln struggled to fuse his political strategy for defeating the Confederacy and reuniting the Union with the Northern military strategy. Lincoln's efforts finally came to fruition with the appointment of General Ulysses S. Grant as the commander of all field armies.⁴ This coupling of strategy and tactics has become more complicated with the progression of warfare, causing a need for an institutionalized approach that takes into account all the powers of the nation-state – diplomatic, information, military, and economic (DIME)- to project a national strategy.

The contemporary concept of EBO came into being as a result of the 1991 Gulf War to extract the invading Iraqi military forces from the sovereign state of Kuwait. As a part of the preparation for Operation Desert Storm, which was the official beginning of combat operations, a planning cell known as the “Black Hole” began work on the overall air campaign against Iraq.⁵ According to Williamson Murray, the term “Effects-Based Operation” originated from this organization.⁶ Through the planning process, the team focused on more than just attacking targets. They became concerned with the effects of attacking specific targets versus focusing exclusively on the destruction of the target. This preoccupation with “second and third order effects . . . mixed with stealth, precision, and electronic countermeasures, destroyed Iraq's integrated air defense system” and marked a change from the old Cold War air campaign strategy to a “new age of air power employment.”⁷ This idea of emphasizing effects and outcomes versus inputs alone gained momentum and has become one of the leading joint experimental concepts today along with Operational Net Assessment (ONA) and Global Force Management (GFM).⁸

The end of the Cold War and the new concept of EBO, demonstrated in Operation Desert Storm, caused military thinkers to reexamine the future of warfare. In 1995, Air Force Colonel John Warden took a theoretical approach to the future of conflict and laid

⁴ Murray and Woods, 27-28.

⁵ Williamson Murray, “Transformation: Volume II,” in *Transformation Concepts for National Security in the 21st Century*, ed. Williamson Murray (Carlisle: Strategic Studies Institute, September 2002), 3.

⁶ Ibid., 3.

⁷ Ibid., 4.

⁸ Peter Pace, Memorandum from the Chairman of the Joint Chiefs of Staff, *2006 Joint Professional Military Education (JPME) Special Areas of Emphasis (SAEs)* (dated 17 January 2006).

the “intellectual foundation” that much of the premise behind EBO is currently based.⁹ He argued that adversaries should be viewed as systems and that “parallel warfare” would dominate in a post-Cold War world.¹⁰ He further claimed that “technology would allow the United States to attack multiple, vital targets simultaneously at the strategic level, and thus collapse an adversary’s system, leaving him with no means to respond.”¹¹ Later, in 2001, Air Force Brigadier General David Deptula, one of the leading planners in the “Black Hole” as a Lieutenant Colonel, expounded on his experiences during the Gulf War and the notion of effects and the technological nature of war. His monograph entitled *Effects-Based Operations: Change in the Nature of Warfare*, furthered Warden’s notion of parallel warfare, adding to the growth of EBO as a concept.

Until 2000, EBO was strictly an Air Force venture focusing on stealth and precision munitions. That year, U.S. Joint Forces Command began work on a joint version of EBO, taking a broader point of view emphasizing the strategic integration of national power in the form of DIME. At the time, EBO was marketed as a new way of doing business that could potentially change the way that staffs conducted preparation and execution of combat operations. Despite its potential, EBO has its detractors. In fact, the preponderance of opposition to EBO is based on potential change to armed services doctrine. The Army, for example, initially felt threatened by the introduction of EBO as a joint concept because it inferred a preference for Air Force use of stealth and precision munitions and potentially reducing the need for Army forces.¹² JFCOM would eventually embrace the Air Force’s operational and tactical targeting processes in the form of Effects Tasking Order (ETO) and Priority Effects List (PEL).¹³

The events of September 11, 2001, identified a new threat to U.S. national security and the need for a new way to fight an unconventional adversary. While

⁹ Gary H. Cheek, “Effects-Based Operations: The End of Dominant Maneuver?” in *Transformation Concepts for National Security in the 21st Century*, ed. Williamson Murray (Carlisle: Strategic Studies Institute, September 2002), 74.

¹⁰ *Ibid.*, 74.

¹¹ *Ibid.*

¹² *Ibid.*, 73.

¹³ U.S. Army Futures Center, “History and Pathways of the Effects-Based Approach (EBA) to Joint Operations,” powerpoint presentation obtained from COL Steve Bullimore, U.S. Army Capabilities Integration Center on August 8, 2006, 3.

international terrorism is a traditional threat, it was never considered a high priority in terms of U.S. national security until 9/11. This new threat, now labeled transnational terrorism, took EBO to a different level, making it a key component to future U.S. joint operations.¹⁴

C. WHY EBO?

A dynamic global political environment and the new threat to national security have warranted a new way of thinking about the conduct of war. The pure military form of EBO, which can be considered the “Air Force” form, deals solely with the military side of the equation and very little with the political or civilian side. When JFCOM took on the task of developing a joint approach to EBO, they acknowledged the change in the political and military environment that required less of a pure military approach, utilizing a Cold War mentality, and looked for a way to encapsulate all aspects of warfare which includes PMESII. JFCOM also recognized that EBO may not necessarily be applicable to every military scenario due to a continued presence of potential conventional threats in the forms of North Korea and Iran. This recognition is evident in the change of terminology from EBO to an effects-based approach to joint operations that took place in 2006. The JWFC went from defining EBO as *the way to* conduct military operations to replacing EBO with EBA as *a way of* conducting military operations.¹⁵

D. TENETS OF EBA

The basic premise behind EBA is viewing the OE as a system-of-systems that are interlinked and affected by each other as a result of actions on any individual system.

¹⁴ U.S. Army Futures Center, 3.

¹⁵ Joint Warfighting Center, U.S. Joint Forces Command, *Commander's Handbook for an Effects-Based Approach to Joint Operations* (Suffolk: U.S. Joint Forces Command Joint Warfighting Center, 24 February 2006), i.

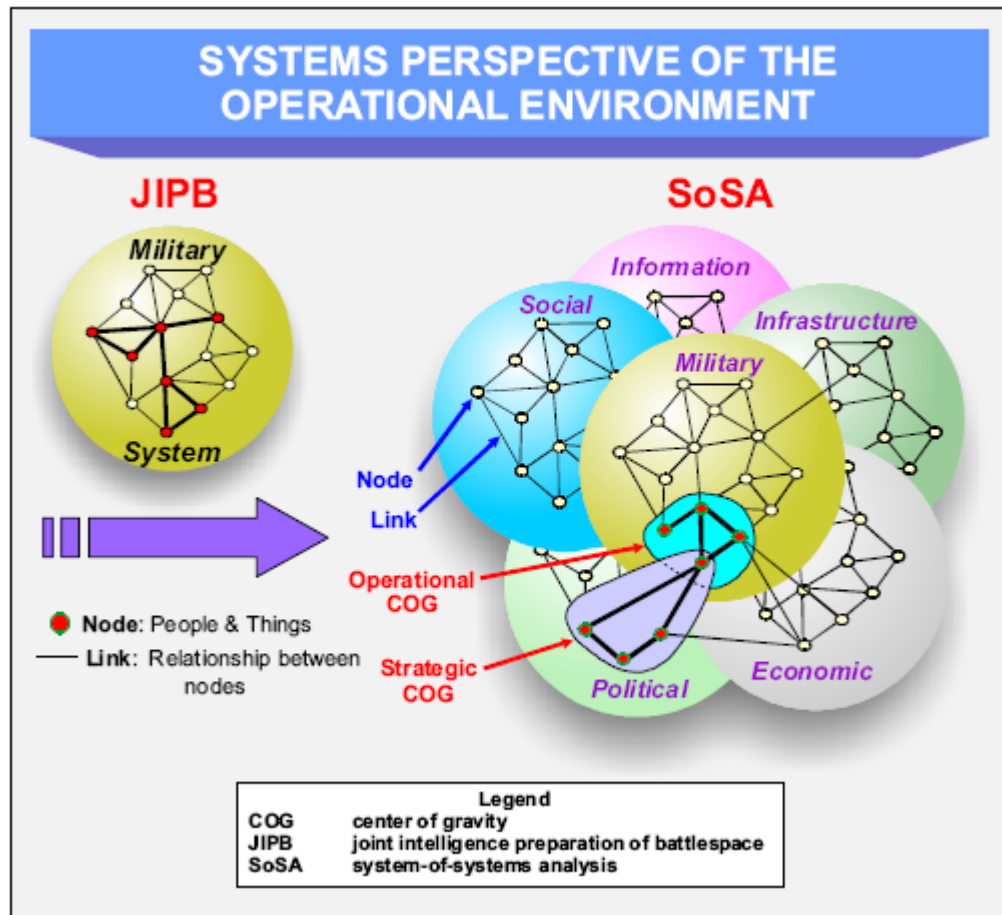


Figure 1. Systems Perspective of the Operational Environment¹⁶

These actions produce effects, which according to the Joint Warfighting Center (JWFC), are defined as “1. The physical and/or behavioral state of a system that results from an action, a set of actions, or another effect” and “2. A change to a condition, behavior, or degree of freedom.”¹⁷ In order to gain this perspective, the joint forces commander (JFC) and his staff must have a holistic understanding of the OE that they are preparing for or conducting operations in.¹⁸ Without an expanded situational awareness of the environment, neither the commander nor staff are able to clearly specify objectives and tasks necessary for success.

¹⁶ Joint Warfighting Center, II-2.

¹⁷ Ibid., I-3.

¹⁸ Ibid., II-1.

At the broadest level, the systems that compose the OE are primarily the PMESII. These interconnected systems consist of nodes, which are fundamental elements “that represent a person, place, or thing,” and links “that represent a behavioral, physical, or functional relationship between nodes.”¹⁹ Some nodes are designated as key nodes because of their relation “to a strategic or operational effect and/or a center of gravity (COG)” and are usually present in multiple systems.²⁰

The realization of near-complete situational awareness of the OE is achieved through a technique known as system-of-systems analysis (SOSA). This analytical process helps identify where forces are needed in order to disrupt or destroy the system, thus achieving a specified objective. It is conducted horizontally across different elements of the OE, and vertically from the tactical to the strategic level of military operations. Applying an EBA to joint operations calls for SOSA to be implemented into the Joint Intelligence Preparation of the Battlefield (JIPB) process. Upon completion of the SOSA, a COG analysis can be conducted in order to identify potential COGs, narrowing down the areas that require influence to achieve desired effects.

The change in thinking from EBO to an EBA to joint operations is most evident in JFCOM’s approach to introducing EBA into the Joint Operations Planning Process (JOPP) in the *Commander’s Handbook for an Effects-Based Approach to Joint Operations*, published by the JWFC in February 2006. According to this document, EBA can be applied to the three main elements of the joint warfighting process – planning, execution, and assessment.²¹

E. EFFECTS-BASED APPROACH TO PLANNING

Applying an EBA to the JOPP enhances the planning of operations from the tactical to the strategic level, as well as give the JFC more options for conducting joint operations. In addition to the standard JOPP, additional steps are included that focus on

¹⁹ Joint Warfighting Center, I-3.

²⁰ Ibid., I-3.

²¹ Ibid., i.

the EBA. These steps are embedded into both the mission analysis and course of action (COA) determination processes and build upon an understanding of the system-of-systems perspective.

The two key additions to the mission analysis process are (1) the definition of the OE as a system-of-systems, as mentioned before, and (2) the identification of desired and undesired effects, corresponding measures of effectiveness (MOE), and potential COGs. Through this procedure, the purposes and objectives of the operation are identified, which are specific to each system and identify which part of the system is to be affected in order to determine proper effects and their related tasks. Effects are used as a means to help build and sustain unity of effort and bridge the gap between objectives and actions.²² From this, a PEL is created, listing the effects that are required to achieve objectives. Next, a task list is developed, which correlates tasks to be completed to create appropriate effects from the PEL. MOEs are then determined for the future assessment of whether the effects from the PEL are the right ones needed to affect the system and the OE. This helps to determine if the right things are being done.

During COA development, effects are the baseline that all COAs are dependent upon. Each COA is required to attain desired effects, and avoid creating undesired effects, as determined by the mission analysis and the JFC's guidance. The EBA to COA development consists of six additional steps in the standard process. First, using the SOSA technique and the JIPB, the OE is once again viewed through the system-of-systems perspective. Second, the critical capabilities (CC), critical requirements (CR), critical vulnerabilities (CV), and key nodes are identified. Third, friendly desired effects are coupled with the COAs. Fourth, enemy desired effects are coupled with the COAs. Fifth, both the attainment of friendly and enemy desired effects are compared within the COA. And last, the risks for undesired effects within the friendly COA are determined.²³

²² Stephen E. Runals, "RE: USJFCOM Public Feedback" Email to author, 15 August 2006.

²³ Joint Warfighting Center, III-13.

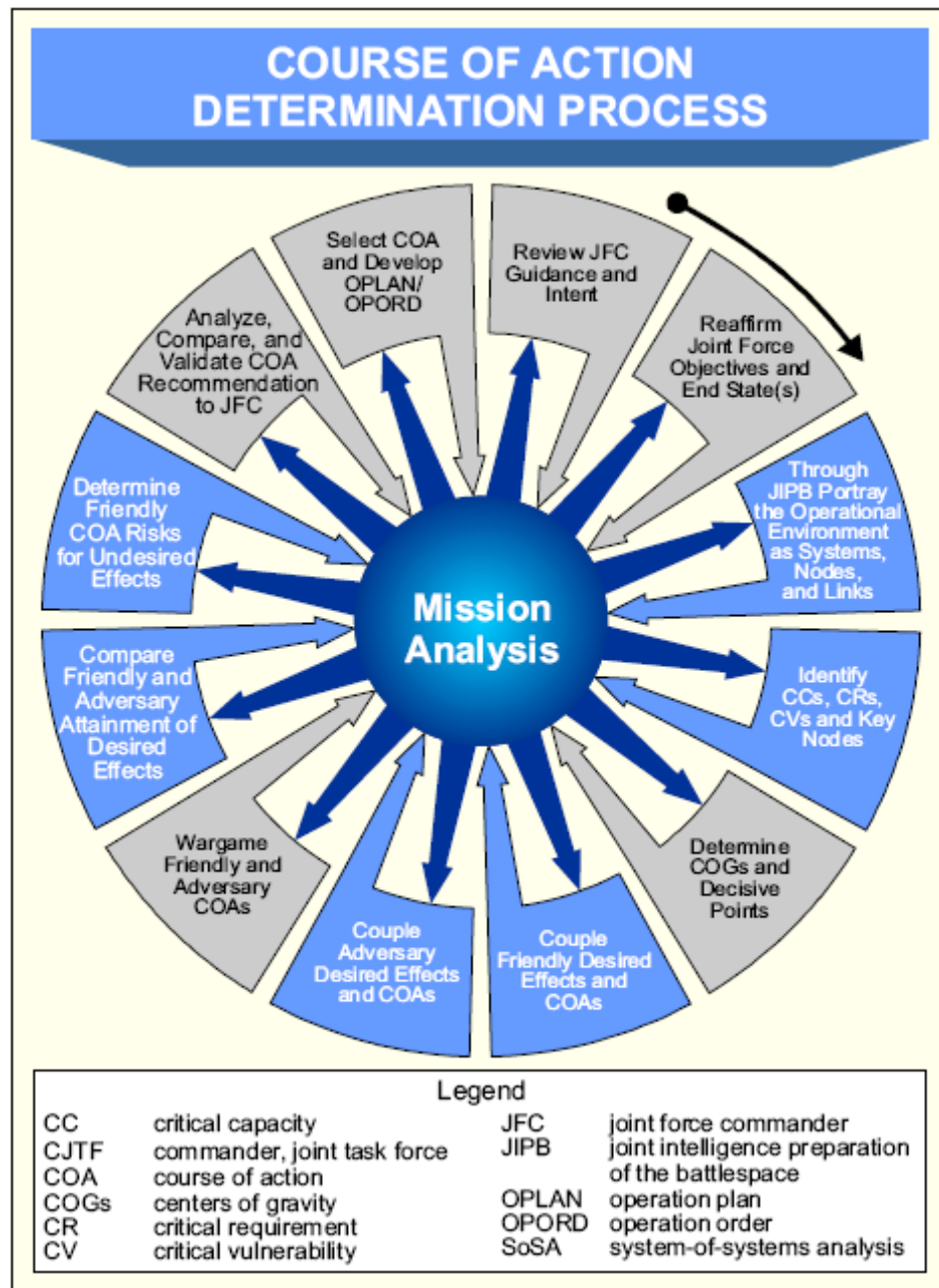


Figure 2. Course of Action Determination Process²⁴

Once the development of potential COAs is completed, each one is vetted through the analysis, comparison, and selection phase of the determination process. The result is a workable list of COAs that are then translated into a plan or order in preparation for

²⁴ Joint Warfighting Center, III-13.

execution. If effects are kept in mind during planning, “then adaptation during execution is made far easier and more rapidly.”²⁵

F. EFFECTS-BASED APPROACH TO EXECUTION

The execution of the joint plan is ideally done by the integration with other elements of national power in order to attain the predetermined desired effects on the identified systems within the OE. This process requires constant “monitoring, assessing, planning and directing actions” to ensure that appropriate tasks correspond to effects attainment and accomplishment of objectives.²⁶ The problem with controlling this dynamic process of task coordination is inherent in “three critical activities: (1) locating and monitoring key systems, (2) directing actions against key nodes within those systems and (3) assessing the system effects of those actions.”²⁷ These activities can be very time consuming and subjective to interpretation.

Two organizations that were created at the joint task force level, with EBA in mind, were the Effects Working Group (EWG) and the Effects Assessment Cell (EAC). The EWG is specifically responsible for effects development during the planning stage, but during the execution stage they work with the EAC to determine why desired effects are not achieved and undesired ones achieved. The EWG then makes recommendations for changes in effects (or tasks) to the JFC for future operations. The EAC applies the MOEs against the intelligence gathered on the systems to be affected to determine whether the desired effects have been achieved.

G. EFFECTS-BASED APPROACH TO ASSESSMENT

Throughout the phases of joint operations it is critical to accurately assess the mission effectiveness based on JFC objectives. An EBA to assessment accomplishes this through the EAC by applying MOEs and measures of performance (MOP). Specifically, answering the questions “how effective is the plan,” and “are the assigned missions, objectives, and desired effects being achieved.”²⁸ MOEs deal with creating effects, while MOPs deal with task accomplishment. These metrics, which can be either qualitative or

²⁵ Joint Warfighting Center, III-23.

²⁶ Ibid., IV-2.

²⁷ Ibid., IV-2.

²⁸ Ibid., IV-8.

quantitative, are reported to the EAC for assessment followed by reports to the EWG for further analysis. Quantitative metrics are preferred over qualitative metrics..

H. SUMMARY

The progression from the early form of EBO to the current more holistic EBA to joint operations has faced many challenges and opponents. While EBA may not be perfect, it is the right direction. The synergism of PMESII requires that future joint operations planning and execution embrace a new integrative process at all levels of war. The way to do this is through the understanding of the OE as a networked, interactive system-of-systems that is influenced through the use of effects. This challenge will not be solely a military responsibility, but an interagency, and multi-national venture to make the world a safer place. It also makes the pursuit of EBA to joint operations an inevitable necessity for the future. In the next chapter, I will address the current Army operational doctrine as well as summarize developments for future joint operations. This comparison and contrast of service and joint doctrines will show that current Army doctrine must be re-evaluated for more effective and efficient use of land forces in an emerging joint OE.

THIS PAGE INTENTIONALLY LEFT BLANK

II. ARMY OPERATIONAL DOCTRINE

A. INTRODUCTION

For the past 230 years, doctrine has provided the foundation for Army operations. As the United States has grown both as a country and a military power within a changing OE, the need for an evolving doctrine is evident. The relevancy of the Army is dependent on its ability to maintain current and pertinent sets of guidelines as a basis for budgeting, tactics and operational art. The change from a bipolar Cold War scenario to a single hegemonic great power, engaged in a “long war,” requires the Army to efficiently transform.²⁹ The development of joint doctrine and its applicability to the Army is a critical part of this transformation. Army doctrine must change as joint doctrine progresses and must do so in the same developmental direction. In the last chapter, I summarized the history and basic concept of Joint EBA. The purpose of this chapter is to provide a brief history of the development of Army doctrine, summarize current Army operational doctrine, and offer a concise look at future Army doctrine in joint operations.

B. HISTORY OF ARMY OPERATIONS DOCTRINE

Army doctrine gradually evolved through time from its beginnings as a standardization process in the Continental Army during the 18th century to its current form of addressing future national security threats in a joint forces context. The first American military doctrine was developed by a Prussian volunteer, Friedrich Wilhelm von Steuben, who, as an aide and future Inspector General for General George Washington, developed the *Regulations for the Order and Discipline of the Troops of the United States*. This regulation focused on basic standards within the Army that all Soldiers were required to adhere to. Steuben’s “Blue Book” remained in force into the 19th century. Writings from military thinkers like Jomini and Clausewitz were translated into English and influenced American doctrine.³⁰ The first American author of military doctrine, Henry W. Halleck, took many of Jomini’s ideas and applied them to the United

²⁹ Department of Defense, *Quadrennial Defense Review Report*, (Washington, D.C.: Department of Defense, 6 February 2006), v.

³⁰ John L. Romjue, *American Army Doctrine for the Post-Cold War* (Fort Monroe, Virginia: United States Army Training and Doctrine Command, Military History Office, April 1996), 11.

States military. His book, *Elements of Military Art and Science* was published in 1846. Many other military and academic professionals, to include West Point professors Dennis Hart Mahan, and Emery Upton, eventually took the lessons learned from the Napoleonic wars, as well as the American wars and introduced new ideas on doctrine in the form of the first official military doctrine manuals, beginning with the *Field Service Regulations* published in 1905 by the War Department.³¹ These regulations would continue to be updated into the 1960s, building on the lessons learned from U.S. conflicts through most of the 20th century. From the origins of the U.S. Army until 1982, the majority of Army doctrine produced was focused on tactical operations with very little emphasis on joint operations.

The AirLand Battle Doctrine published in 1982, emphasized a more holistic view of the battlefield. The main tenet of this doctrine was keeping the enemy off balance while pursuing initiative and momentum. AirLand Battle doctrine focused on the Soviet/Warsaw Pact threat in Europe and lasted until 1993 when it morphed into AirLand Operations Doctrine.³² This post-Cold War set of guidelines was necessary due to the fall of the Soviet Union as incorporated lessons from Operations Desert Shield and Desert Storm in 1991. The lack of an equal foe in the form of the Soviet Union and the conduct of operations during the build-up to and execution of the Gulf War resulted in a new operations doctrine. This new doctrine emphasized how the Army would fight as a part of a future joint, combined, and interagency U.S. force. Less than a decade later, these principles were challenged again as a result of 9/11 and the subsequent invasions of Afghanistan and Iraq.

C. BASICS OF CURRENT ARMY OPERATIONS DOCTRINE

The Army defines doctrine as a “concise expression of how Army forces contribute to campaigns, major operations, battles and engagements”³³ It provides guidance, not rules, to the force and offers a sound reference to ensure that operations are as standardized as possible across a wide range of conflict and support operations. The

³¹ Romjue, 13.

³² Ibid., 17.

³³ Field Manual 1, *The Army* (Washington, D.C.: Headquarters, Department of the Army, 14 June 2005), 1-20.

inevitable change in national security threats and a complementary national military strategy require Army doctrine to reflect these adjustments as well. It is refined and developed through education, social and technological innovation, as well as changes in the operational environment. Doctrine also promotes intellectual thinking as well as innovative reasoning to ensure that the Army remains the most effective and efficient landpower in the world.

The current conduct of Army operations is based on capstone and keystone doctrine – terms used to identify key documents that explain how the Army functions. They are a culmination of principles and a baseline for Army forces to perform operations. These documents “provide the fundamental principles for employing landpower” and “provide doctrinal direction for the conduct of full spectrum operations.”³⁴ Capstone doctrine is comprised of Field Manual (FM) 1, *The Army*, dated June 2005, and establishes the basic principles for implementing landpower, provides a description of the “profession of arms,” and expands on the Army involvement in joint forces.³⁵ FM 3-0, *Operations*, dated June 2001, is the second capstone doctrine. It establishes the role of the Army in full spectrum operations, discusses the concept of battle command and details the operations process in offensive, defensive, stability, and support operations.³⁶ The two primary keystone documents that the Army relies on for operation standardization are FM 5-0, *Army Planning and Orders Production*, dated January 2005, and FM 6-0, *Mission Command: Command and Control of Army Forces*, dated August 2003. FM 5-0 provides fundamental principles to planning and the development of tactics, techniques, and procedures (TTP). It also implements a doctrinal framework for military decision-making in the forms of the military decision-making process (MDMP) and troop leading procedures (TLP).³⁷ FM 6-0 is the doctrinal basis for command and control (C2) in all Army operations to include contributions to joint

³⁴ Field Manual Interim 5-0.1, *The Operations Process* (Washington, D.C.: Headquarters, Department of the Army, 31 March 2006), vi.

³⁵ Field Manual 1, Foreword.

³⁶ Field Manual 3-0, *Operations* (Washington, D.C.: Headquarters, Department of the Army, 14 June 2001), vii.

³⁷ Field Manual 5-0, *Army Planning and Orders Production* (Washington, D.C.: Headquarters, Department of the Army, 20 January 2005), v.

operations.³⁸ All of these foundational documents constitute the fundamentals of Army operations and the procedures that go into their conduct. As history continues to evolve, so must these manuals.

Army operational doctrine is based on the Army's operational concept that encompasses four fundamental elements – “combined arms, joint interdependence, full spectrum operations, and mission command.”³⁹ This concept is the basis for how the Army fights and is the precursor to TTPs, force organization, logistical support and training. It is separate from future conceptual doctrine, in that it is applicable to the current national and global situation and changes as the national military strategy is adjusted.

The concept of combined arms brings together the various branches of the Army in the pursuit of a synergistic conduct of a multitude of missions. The various branches of the Army from conventional forces, such as infantry, armor and field artillery, coupled with functional areas like information operations, public affairs, and multi-functional logisticians, and specialty areas like special forces, psychological operations and civil affairs are brought together to create the most effective and comprehensive force to defeat an enemy or support an operation within a minimum amount of time and least amount of casualties.⁴⁰

Joint interdependence is the combination of the separate services into a joint force that utilizes all the capabilities of land, sea, air and space power. The Army, along with the Marine Corps, provides the necessary ground component to any joint mission giving the JFC the capability to take and hold terrain. Future Army forces will always be a part of an integrated joint force and will rely on other services to complement their unique capabilities.⁴¹ For this reason, further discussion of Army doctrine and joint operations is provided later in this chapter.

³⁸ Field Manual 6-0 *Mission Command: Command and Control of Army Forces* (Washington, D.C.: Headquarters, Department of the Army, 11 August 2003), viii.

³⁹ Field Manual 1, 3-3.

⁴⁰ Field Manual 1, 3-5.

⁴¹ TRADOC Pamphlet 525-3-0, *The Army in Joint Operations: The Army's Future Force Capstone Concept 2015-2024 Version 2.0* (Fort Monroe, Virginia: Department of the Army, Headquarters, United States Army Training and Doctrine Command, 7 April 2005), 10.

According to Field Manual 1, Army full spectrum operations include “offensive, defensive, stability and reconstruction, and civil support operations.”⁴² The first three are conducted outside the boundaries of the U.S., while the fourth is applicable within the U.S. boundaries. The ability to conduct these missions simultaneously encompasses full spectrum operations. This principle acknowledges the current challenge of confronting both conventional and irregular warfare, an important criterion to future operational doctrine.

The last of the four operational concept elements – mission command – is simply the preferred way of C2 within the Army. It allows forces to accomplish their missions without being impeded by cumbersome micro-managerial regulations and procedures and places command responsibility at every level of organization from the squad leader to the army and joint force commander. The adherence to mission command entails consistent Army flexibility to prepare and react to the numerous and varied required missions.

Unified action is another basic Army principle and a baseline concept to EBA. “Under unified action, commanders integrate joint, single-service, special, and supporting operations with interagency, nongovernmental, and multinational – to include United Nations (UN) – operations.”⁴³ The goal of unified action is to capitalize on the unity of effort of various capabilities and force structure to achieve both strategic and operational objectives through tactical means.⁴⁴ In order to successfully accomplish the mission, the commander must ensure that the overall objectives are understood and adhered to across the three levels of war. These levels of war (strategic, operational, and tactical) are interdependent. The strategic level incorporates national policy and objectives, while the operational level is the campaign or major operation that is used to project policy within areas of operation (AO). The tactical level is the means of accomplishing strategic goals through the use of lethal and non-lethal force across the spectrum of military capabilities.

⁴² Field Manual 1, 3-4.

⁴³ Field Manual 3-0, 2-1.

⁴⁴ Ibid.

The linkages between these three levels are paramount in successfully projecting policy and will on U.S. vital interests in the international community and achieving the four fundamental elements.

The translation of strategic goals into operational objectives and tactical actions is achieved through key planning and preparation mechanisms used by the Army – the military decision-making process (MDMP). The MDMP “is a process that integrates the activities of the commander, staff, and subordinate commanders in developing an operation plan or order. It establishes procedures for analyzing a mission; developing, analyzing, and comparing courses of action; selecting the best course of action; and producing an operation plan or order.”⁴⁵ This process can be as detailed as necessary when time permits or can be narrowed down into a brief process that allows for shorter reaction times.

In order for the Army to ensure it is integrated with joint doctrine and concepts, FM 3-0, FM 5-0, and FM 6-0 are being revised in conjunction with Joint Publication (JP) 3-0, *Doctrine for Joint Operations*, and JP 5-0, *Doctrine for Planning Joint Operations*.⁴⁶ Unfortunately, this is not the case in terms of EBA. The next section will elaborate on how the Army sees its role in the future joint force of the 21st century.

D. FUTURE ARMY DOCTRINE AND JOINT OPERATIONS

Developments in Army doctrine recognize the recent changes in the operational environment and counter these “persistent and emerging challenges” by refining past doctrine and introducing newer ideas.⁴⁷ The challenges come in the form of “terrorism, insurgency, civil war, state-on-state, or coalition conflict” and are categorized as “irregular, traditional, catastrophic, and disruptive,” according to the latest National Defense Strategy (NDS).⁴⁸ To meet these challenges, the Army plans to continue development of innovative technologies, create a more versatile and agile force, advance its ability to project power rapidly around the globe and maintain multi-dimensional capabilities. These efforts will be accomplished through the capitalization of knowledge,

⁴⁵ Field Manual Interim 5-0.1, 1-12.

⁴⁶ Ibid., vi.

⁴⁷ TRADOC Pamphlet 525-3-0, 41.

⁴⁸ Ibid., 41.

use of speed in power projection and simultaneity of operations and contribution to homeland security. They will also further rely on multidimensional operations, interagency collaboration, multinational operations, and technology advancement.⁴⁹

The difficulties that future commanders will face are the integration of new technologies, and more importantly, the adjustment from purely force-on-force scenarios to those that require dealing with civilian and enemy elements simultaneously from multiple dimensions. These types of operational environments will require the careful balancing of lethal and non-lethal forces and actions in conjunction with non-military capabilities.

According to Training and Doctrine Command (TRADOC) Pamphlet 525-3-0, *The Army in Joint Operations: The Army's Future Force Capstone Concept 2015-2024*, future Army operations will be conducted “in a joint, interagency, and multinational (JIM) context,” due to the nature of a potential multidimensional enemy that uses a variety of unconventional means in attempting to defeat U.S. forces.⁵⁰ Because of the changing tactics and strategies used by enemy forces, it has become essential for commanders at all levels to understand the threat and how to defeat it through cooperation with other instruments of national power – diplomatic, informational, and economic. In many instances where the diplomatic, economic, and informational executors of national power are unable to accomplish their duties because of hostilities within the area of operations or the context within which these powers are required, military execution of these powers may be required until secured conditions are established.

The Joint Warfighting Center is currently developing the concept of an effects-based approach to operations (EBAO) as one of the solutions to these dilemmas. While this evolving model is widely accepted and utilized across joint task forces and joint commands at the strategic and operational levels, the Army has not included it into current or future operational doctrine. In fact, the latest edition of Field Manual Interim (FMI) 5-0.1, *The Operations Process*, clearly states that “Army forces will not adopt the

⁴⁹ TRADOC Pamphlet 525-3-0, 4-8.

⁵⁰ Ibid., 16.

joint system analysis of the operational environment, an effects-based approach to planning, or effects assessment as described in JP 3-0 [Revision Final Coordination] (RFC).”⁵¹ The manual goes further in claiming that EBA is conducted only at the joint strategic and operational levels of war and introduces confusion over key definitions of terms, like effects, used by the Army and Joint community.⁵² The Army’s deletion of EBAO from current and future operational doctrine restricts the commander’s ability at the tactical level to officially use everything at his disposal. For reasons unknown, this exclusion does not represent the current use and success of EBAO at the tactical level in Operation Iraqi Freedom and Operation Enduring Freedom.⁵³

E. SUMMARY

The need to refine Army operational doctrine, in conjunction with joint doctrine based on the changing operational environment, is vital to the future relevancy of the Army. Current and future Army areas of operation will contain more non-combatant and insurgent forces, fighting from behind the protection of civilians and shadow organizations. These changes require Army commanders to have access to more avenues of influence within his operational environment. Because of this, Army doctrine must accept emerging concepts like EBAO. In the next chapter, I will identify potential shortfalls and conflicts between joint EBAO and current Army doctrine and explore whether or not EBAO is right for the Army.

⁵¹ Field Manual Interim 5-0.1, 1-10.

⁵² Ibid., 1-10.

⁵³ CALL Handbook No. 04-14, iii.

III. POTENTIAL SHORTFALLS AND CONFLICTS TO INCLUDING EBAO IN ARMY DOCTRINE

A. INTRODUCTION

The development of new doctrine from innovative and cutting-edge concepts can be a timely and repetitive process that takes numerous revisions in order to get the particulars of new ideas correct. Attempting to deploy new concepts into the operating field can sometimes reveal shortcomings and difficulties in the implementation of these new methods of conducting operations and cause a tidal wave of criticism. This is especially true when trying to impose changes on those who have operated comfortably within past forms of doctrine. The development of EBAO is no exception to criticism and in some cases, resentment. In this chapter, I will identify many of the problems that potentially plague the integration of EBAO into current Army doctrine. These criticisms and challenges span the gamut of declaring that the discussion over effects-based approaches is only a matter of semantics to those that pin these approaches as serious errors in development that put the security of the nation at risk.⁵⁴ I will draw upon the basics of EBAO in Chapter I and the current Army operational doctrine in Chapter II to point out how EBAO is perceived by both the joint and Army communities. This chapter will identify the problems that Chapter IV will refute and/or support and lay the groundwork for the recommendations of implementation that will be presented in Chapter V.

As mentioned earlier, doctrine can go through many revisions before it is considered to be acceptable to the units and personnel who are expected to utilize it. Even when these new ideas are considered acceptable, they continue to go through modifications as lessons are learned through trial and error. Professor James B. Ellsworth of the U.S. Naval War College, in responding to a critique of EBAO, remarked that “no successful combat doctrine has ever emerged coherent and flawless from the outset: ‘first drafts’ tend to be ‘80 percent solutions’ that appear ill defined and improbable to the

⁵⁴ David Fastabend, Major General, “EBO and the Classical Elements of Operational Design,” U.S. Army Futures Center, Training and Doctrine Command (Presentation, January 31, 2006), 4.

masters of the old ways.”⁵⁵ When looking at the evolution of EBAO, one must understand that the initial draft of the concept was an “80 percent” solution and not completely ready for implementation into the operating joint or separate service forces. This is the reason it was marked as a concept and not doctrine. Only after it goes through a number of iterations will it become applicable to current Army operations and accepted by senior leaders. As Ellsworth points out, consider the example of the initial concept of carrier warfare originally being declared “heresy” by the “battleship admirals” and only later, after many revisions and changes in perceptions, did it become accepted as one of the staples of naval warfare in the twentieth century.⁵⁶ Even though the initial concepts of EBAO have gone through multiple revisions and are now being considered for doctrine, the fact remains that concepts that work must be quickly integrated into TTPs for use by forces deployed throughout the world. Instead of relying on trial and error with thousands of Soldier’s lives at risk in Iraq and Afghanistan, Joint and Army communities must work together to integrate future concepts into doctrine and focus on guarding against future casualties.

The struggle for what is right doctrinally for joint operations and what is right for Army operations has been an issue from the inception of joint warfare.⁵⁷ Competition between JFCOM and the Army has become so heated that the latest edition of FMI 5-0.1 openly rejects EBAO and states that “Army forces will not adopt the joint systems analysis of the operational environment, an effects-based approach to planning, or effects assessment as described in JP 3-0 (RFC).”⁵⁸ Such a commanding rejection of an up-and-coming developmental joint concept, promoted by the joint community, can only help to further confuse and serve to convolute the future of joint operations in warfare.

B. MISINTERPRETATIONS OF EBAO

One of the most reoccurring criticisms of the EBAO concept is the perceived inconsistency in the definitions of the effects-based concept and the operational terms

⁵⁵ James B. Ellsworth, “To the Editor,” *Joint Forces Quarterly* 42 (3d quarter 2006): 6.

⁵⁶ *Ibid.*, 6.

⁵⁷ Price T. Bingham, “Seeking Synergy: Joint Effects-Based Operations,” *Joint Forces Quarterly* (Spring 2002): 58.

⁵⁸ Field Manual Interim 5-0.1, 1-10.

used to explain it. FMI 5-0.1 even goes as far as stating that one of the fundamental difficulties of understanding EBAO is “the lack of consensus as to what it is and how to use it,” resulting in confusion over the revised explanation given in the field manual.⁵⁹ When it was first marketed to the separate services, it was labeled as the new way of conducting operations that would revolutionize warfare.⁶⁰ This lends to the reason it was presented as “effects-based operations” and later modified to an “approach,” changing it from being “the way,” to being “a way” of conducting operations. Others remark that labeling EBAO as a solution to conducting operations is wrong, that it is actually a way of planning for operations with emphasis on assessment and analysis methods.⁶¹ Critics also point out that focusing and labeling EBAO as effects oriented, gives the perception that commanders in the past were never concerned with such an important element of warfare as effects.⁶² By supposedly mislabeling EBAO something that it is not, concept developers alienate senior leaders that are comfortable with planning and conducting operations within the framework of AirLand Battle doctrine and the current Army Operational Concept.

Another area that poses difficulties to the acceptability of EBAO is the differences in definitions of key operational terms used both by the Joint and Army communities. Terms such as effects, objectives, tasks, and center of gravity have caused confusion within the Army because of the alternative definitions that JFCOM has given in order to define what the principles and processes of EBAO are. This problem has become such an issue that it was included in an e-mail from retired Marine Corps Lieutenant General Paul Van Riper to the Chairman of the Joint Chiefs of Staff (CJCS), General Peter Pace, the Commandant of the Marine Corps, General Michael Hagee, and the Chief of Staff of the Army (CSA), General Peter Schoomaker. Lieutenant General Van Riper writes that since 2002 he has witnessed numerous e-mails and papers that attempt to define what “effects” really are and that all the discussion of a true definition has caused the confusion of field

⁵⁹ Field Manual Interim 5-0.1, 1-7.

⁶⁰ Brad R. Borman, Lieutenant Colonel, “RE: USJFCOM Public Feedback” E-mail to author, 19 July 2006.

⁶¹ Fastabend, 19.

⁶² Ibid., 10.

grade officers across the services who are attempting to understand EBAO.⁶³ This issue is also pointed out by the Director of the Army Futures Center, Lieutenant General John Curran, in a memorandum to subordinate commanders in TRADOC that directs how Army training commands should go about potentially introducing the concepts of EBAO into their curricula. According to the memorandum, EBAO “has created some confusion in the force . . . with new terms and ideas.”⁶⁴

C. IS EBAO REALLY NECESSARY

The necessity to change the way one conducts himself is dependent upon changes in the environment and, as mentioned in Chapter I, if one does not adapt to the changing environment around him, he runs the risk of succumbing to that environment. Critics of EBAO accept the assertion that the OE has changed over the past fifteen years, but claim that the changes in the OE do not warrant a change in doctrine to reflect EBAO. Their argument is that EBAO is nothing new and that the Army Operational Concept has always taken into account the principles of an effects-based concept, but in different terms.⁶⁵ Current Army doctrine claims that even when operation orders include new joint concepts such as effects-oriented outcomes, new planning or execution methods are not needed and should not be looked upon as replacements to what has worked in the past.⁶⁶

D. INAPPLICABLE AT TACTICAL LEVELS OF OPERATION

The applicability of EBAO towards tactical levels of warfare is also a major concern of Army leadership. Current Army policy claims that EBAO is not designed to be implemented by tactical forces. It is solely meant to be applied to the strategic and operational levels of war by staffs that are properly manned to conduct effects-based processes, which are perceived to be too complex for tactical staffs.⁶⁷ The methods prescribed by EBAO advocates are seen as being too cumbersome, manpower intensive,

⁶³ Paul Van Riper, “Concerns” E-mail to General Peter Pace, General Michael Hagee and General Peter Schoomaker, 11 December 2005.

⁶⁴ John M. Curran, Lieutenant General, U.S. Army, “MEMORANDUM FOR SEE DISTRIBUTION, SUBJECT: Effects Based Concepts and Doctrine in Army Education,” Headquarters United States Army Training and Doctrine Command Futures Center, 22 December 2005, 2.

⁶⁵ Allen W. Batschelet, Lieutenant Colonel, “Effects-Based Operations for Joint Warfighters,” *Field Artillery* (May-June 2003): 10.

⁶⁶ Field Manual Interim 5-0.1, 1-10.

⁶⁷ *Ibid.*, 5-0.1, 1-7 and 1-10.

and intelligence dependent for the limitations of a tactical commander and his staff. Since principles of conventional force-on-force tactical warfare advocate that non-military elements of DIME are less important than actual enemy forces, critics of EBAO claim that tacticians have no need to concern themselves with the system-of-systems approach which encompasses all the elements of national power.

These same critics also claim that tactical commanders do not have the ability to understand the difference between effects and tasks. This argument is not purely based on the difference in the definition of the two terms, but the ability of a subordinate commander to decide between completing an assigned task and just achieving a desired effect without attempting to complete the task. According to one briefing conducted by the Joint and Army Concepts Division (JACD) of the Army Capabilities Integration Center (ARCIC),

Giving a subordinate unit an option to either accomplish a task or generate an effect is outrageous. Tactical ground combat is too complex for this kind of latitude.⁶⁸

Apparently, tactical commanders and staffs are seen as not being experienced enough to make decisions on whether to attempt an assigned task from an operational headquarters that may be high-risk or rather conduct an implied task that may be less risky that would obtain the same effects desired from the operational and strategic level. These assumptions will prove detrimental to the applicability of EBAO by isolating subordinate units into being solely executioners of a plan versus being vital contributors into the planning and execution portions of the EBAO process.

E. INCOMPATIBILITY WITH CERTAIN SYSTEMS

Another view held by those who do not agree with EBAO methodology is the notion that an effects-based analysis process does not work with systems that are interactively complex. General Van Riper argues in his famous e-mail to the CJCS and service chiefs that when Colonels Deptula and Warden initially pitched the idea of EBO, they attempted to apply a method of conducting operations on systems that it was not conceived to be used on. Systems that include the elements of diplomacy, information

⁶⁸ U.S. Army Futures Center, 15.

and economics are seen as being too unpredictable for military planners to analyze and recommend options for obtaining certain effects in order to meet certain end states.⁶⁹

Major General David Fastabend in January 2006, then Chief of Staff and Deputy Director of the Army Futures Center, reinforces General Van Riper's argument by posing that this problem is a "fatal flaw" in EBAO. By taking a reductionist method like system analysis, meant for "structurally complex systems" and applying it to an "interactively complex system" that requires a holistic method like EBAO, and vice versa is unacceptable.⁷⁰ These arguments suggest that the inception of EBAO is an attempt to apply a new concept to all operations instead of just some.

F. UNCERTAIN MEASURES OF SUCCESS

The introduction of SoSA from the EBAO concept in order to identify areas that need to be analyzed and assessed for the purpose of creating effects and measuring those effects and performances has caused concern among some. One of the issues with conducting this type of analysis is the subjectivity of the criteria used to evaluate the interconnectivity of the systems.

When attempting to establish what the measurement criteria should be in determining success, some critics believe that EBAO is incapable of making these determinations. The use of a subjective metric could easily skew the analysis of whether a desired effect is truly being achieved, creating more confusion within the OE and circumventing the need for an EBA to joint operations. Milan Vego, a Professor of Operations in the Joint Military Operations Department at the Naval War College, even stated as a part of an in-depth critique that

The effects-based approach to warfare is heavily dependent on mathematical methods for predicting and measuring effects. This increasing trend toward using various metrics to assess essentially unquantifiable aspects of warfare only reinforces the unrealistic views of many that warfare is a science rather than both an art and a science.⁷¹

⁶⁹ Van Riper e-mail.

⁷⁰ Fastabend, 10.

⁷¹ Milan N. Vego, "Effects-Based Operations: A Critique," *Joint Forces Quarterly* 41 (2d quarter 2006): 51.

Comments like these undermine the basic notion that EBAO is measurably a better way of defeating the enemy while stabilizing the OE from a holistic approach.

G. CULTURAL RESISTANCE

Attempting to change doctrine throughout the Army, let alone implementing concepts from external sources such as JFCOM, will be an uphill battle, especially given the fact that the U.S. military forces are decisively engaged in current operations in both Iraq and Afghanistan. As Colonel Allen Batschelet puts it, “Changing the culture will take many years as leaders and staffs become familiar with the concept and effects-based thinking becomes inculcated in service and joint educational programs and institutions.”⁷² But before there can even be hope that effects-based concepts will be accepted, senior Army leaders must be convinced that it is worthwhile and has added value to current doctrine.

Not only will the Army and joint cultures need to accept these concepts, but the agencies and organizations that make up the diplomatic, informational and economic elements of national power must also. The potential for convincing these non-military entities is not seen as being very promising. Some doubt that even a Presidential Order would cause the interagency staff to work together and that only “the threat of bodily harm [would] get them to work together and develop an ‘interagency’ campaign plan.”⁷³ The obstacles are many, to include attempting to get those who are in their comfort zone with the current ways of conducting business to try something different and for the most part unproven in their eyes.

H. LACK OF ORGANIZATIONAL STRUCTURE

As one critic pointed out earlier, EBAO is meant for joint staffs that have the proper manpower and experience to conduct effects-based operations, while staffs at the tactical level are not prepared to take on a role that includes in-depth analysis of a highly complex system.⁷⁴ Many staffs from the corps to the battalion level are limited in the

⁷² Batschelet, 11.

⁷³ U.S. Army Futures Center, 11.

⁷⁴ Field Manual Interim 5-0.1, 1-10.

number of individuals that they have to conduct planning, execution and assessment duties.⁷⁵ Most sections within these lower staffs have only one or two officers that are available to contribute to these processes and many times they are the least experienced officers at their particular rank within the unit. Non-commissioned officers (NCO) are even fewer in their numbers and most times have specific duties that do not entail analyzing or planning operations. Relying on a staff organization that was created to primarily conduct conventional force-on-force operations in a methodical step-by-step manner is not feasible when confronted with the multiple and diverse number of systems that a staff must deal with in an effects-based environment.

I. LACK OF LEADER EDUCATION

An additional obstacle to creating a culture where new ideas and concepts are accepted is a lack of understanding these concepts, as a result of limited educational exposure. As of July 2006, EBAO was not being taught at the Army Command and General Staff College (CGSC) and for the most part is not included in lower-level officer training within the branches.⁷⁶ Limiting what the officer, as well as non-commissioned officer students is exposed to conceptually will severely limit the ability to understand and develop opinions on these new ideas. It will also challenge the officer or NCO who finds himself or herself assigned to a joint staff or an Army staff with a commander who believes in utilizing EBAO. Because EBAO is not accepted as doctrine by TRADOC, many training commands refuse to include it in their lesson plans, deferring to officially approved written doctrine.

J. SUMMARY

The introduction of new concepts and ideas that are perceived as challenging tried and true doctrine faces many obstacles to its potential inclusion as acceptable warfighting principles. As noted in this chapter, models that are perceived as unproven will attract many critics who feel threatened by change. The problem with many of these critiques are that they have not taken into account the developmental nature of concepts and the

⁷⁵ Center for Army Lessons Learned (CALL), U.S. Army Training and Doctrine Command (TRADOC), *OEF/OIF CAAT Initial Impressions Report* (Fort Leavenworth, KS: CALL, TRADOC, December 2003), 37.

⁷⁶ Dallas Eubanks, Lieutenant Colonel, telephone conversation with author on 11 July 2006.

fact that pre-approved notions are meant to be modified to reflect what is realistic. Most criticisms are posed with a “we versus them” underpinning that fail to accept alternative views or explanations of the issue. In the next chapter I will address each of the problems and challenges presented here and suggest other explanations or solutions to them and in some instances provide further support in substantiating these concerns.

THIS PAGE INTENTIONALLY LEFT BLANK

IV. REVEALING THE MISCONCEPTIONS

A. INTRODUCTION

All new concepts and ideas will initially have a number of critics that either do not understand these new theories or do not believe that they will work. EBAO has had and continues to have numerous critics from the higher echelons of Army leadership to academics in the Armed Forces war colleges and service academies. With time, these critiques may become less or more, depending on the future track record of including EBAO into Army operations. Ways to quiet the arguments against using effects as a basis for conducting operations are through the education of these critics and the requirement of them to officially accept these new ideals. Misconceptions can be clarified through information. In this chapter I will address the shortfalls and conflicts of including EBAO in Army doctrine. Based on those cited in the previous chapter, I will explain how these issues are not as necessarily as bad as some believe.

B. EBAO AS A REQUIREMENT

The evolution of Army doctrine over the past 235 years has been somewhat slow in keeping up with developments in technology and operational theory as well as in instituting lessons learned from previous combat operations. It has also been rather stagnant since the inception of the Army Operational Concept, which followed the post-Vietnam AirLand Battle doctrine of the 1980s. The progression of doctrine is best analogized by retired Colonel Ben S. Malcolm in his book *White Tigers*, when he writes about his experience in Infantry Officer Basic Course learning old World War II doctrine in preparation for deployment to the Korean peninsula in 1951. He writes, “Army doctrine is something like an old mule; once it’s moving in a certain direction it is almost impossible to get it to move in another direction without a great deal of pulling and tugging and shouting.”⁷⁷

While Army doctrine may openly reject the applicability of EBAO to Army operations, the fact remains that joint doctrine is required to be followed by the separate services. The latest release of JP 3-0 encompasses joint keystone doctrine and “provides

⁷⁷ Ben S. Malcolm, *White Tigers*, (Washington, D.C.: Brassey’s, Inc., 1996), 35.

the doctrinal foundation and fundamental principles that guide the Armed Forces of the United States in the conduct of joint operations across the range of military operations.”⁷⁸ This requirement for the Armed Forces to follow joint doctrine is also cited within JP 3-0 as follows:

Joint doctrine established in this publication applies to the joint staff, commanders of combatant commands, subunified commands, joint task forces, subordinate components of these commands, and the Services. The guidance in this publication is authoritative; as such, this doctrine will be followed except when, in the judgment of the commander, exceptional circumstances dictate otherwise. If conflicts arise between the contents of this publication and the contents of Service publications, this publication will take precedence unless the Chairman of the Joint Chiefs of Staff, normally in coordination with the other members of the Joint Chiefs of Staff, has provided more current and specific guidance.⁷⁹

Now that the CJCS has dictated through the latest release of JP3-0 that the services will follow joint doctrine, and EBAO being a part of that doctrine, all services, to include the Army, should fall in line and embrace the concept of EBAO and learn how to include effects-based processes into the capstone and keystone principles of the Army.

C. THE TRUE DEFINITION OF EBAO

New concepts that are initially proliferated through an organization in order to create acceptance among skeptics as well as neutral parties can become confusing and misinterpreted or ill-defined. This was the case with EBAO. According to a staff officer at J9 in JFCOM, the initial proponents of EBO did a poor job of marketing it after it was experimented with in Millennium Challenge 2002.⁸⁰ EBO has since evolved into a way of thinking. As recently as 19 May 2006, Air Force General Lance Smith, U.S. JFCOM Commander, referred to EBAO as being in actuality “effects-based thinking.”⁸¹ The realization that EBAO may not be applicable to every situation has resulted in advocates of the concept to tailor their rhetoric away from thinking of EBAO as the only way of

⁷⁸ Joint Publication 3-0, *Joint Operations* (17 September 2006), i.

⁷⁹ *Ibid.*, i.

⁸⁰ Borman, E-mail to author.

⁸¹ U.S. Joint Forces Command, “Media Availability at the Conclusion of Multinational Experiment 4,” News from USJFCOM, 19 May 2006 [news release online]; available from <http://www.jfcom.mil/newslink/storyarchive/2006/sp051906.htm>; Internet; accessed 1 November 2006.

planning, executing and assessing operations, to being a way that can be used to enhance the current Army methodology that is still viable in today's operational environment.

Many critics argue against EBAO solely on the basis that it is not officially sanctioned by the services as doctrine. The *Commander's Handbook for an Effects-Based Approach to Joint Operations*, published 24 February 2006, concurs with this fact, stating that it is "a pre-doctrinal document," but went on to clarify that it "serves as a bridge between the joint prototype and its migration into doctrine."⁸² The recent release of JP 3-0 confirms that EBAO is now considered to be doctrine by JFCOM, which should quell the arguments over whether or not the Army should even be discussing the inclusion of EBAO into its doctrine. JFCOM has officially recognized the importance of including the tools and principles of EBAO into joint doctrine by taking this controversial step of including effects-based ideals in the Joint Operation Planning Process (JOPP).

The acceptance and inclusion of effects-based thinking has also resulted in the standardization of some terminology that has been confused between the separate services and the Joint community. While this will force the clarification of definitions on the services, the original definitions laid out both by the Army and JFCOM were not that different. Consider the different definitions of effect, end state, objective, task, and center of gravity compared to each other:

Effect:

JFCOM: 1. The physical or behavioral state of a system that results from an action, a set of actions, or another effect. 2. The result, outcome, or consequence of an action. 3. A change to a condition, behavior, or degree of freedom.⁸³

Army: A result, outcome, or consequence of an action.⁸⁴

End State:

JFCOM: The set of required conditions that defines achievement of the commander's objectives.⁸⁵

⁸² Joint Warfighting Center, i.

⁸³ Joint Publication 3-0, GL-14.

⁸⁴ Field Manual 5-0.1, Glossary-4.

Army: At the operational and tactical levels, the conditions that, when achieved, accomplish the mission. At the operational level, these conditions attain the aims set for the campaign or major operation.⁸⁶

Objective:

JFCOM: 1. The clearly defined, decisive, and attainable goal toward which every operation is directed. 2. The specific target of the action taken (for example, a definite terrain feature, the seizure or holding of which is essential to the commander's plan, or an enemy force or capability without regard to terrain features).⁸⁷

Army: None

Task:

JFCOM: None. (Approved for removal from the next edition of JP 1-02.)⁸⁸

Army: A clearly defined and measurable activity accomplished by individuals and organizations. Tasks are specific activities that contribute to the accomplishment of encompassing missions or other requirements.⁸⁹

Center of Gravity:

JFCOM: The source of power that provides moral or physical strength, freedom of action, or will to act. Also called COG.⁹⁰

Army: Same as JFCOM⁹¹

After comparing these definitions, one can conclude that critics and advocates have been speaking past each other in their arguments. Even though JFCOM has included the Army version of the definition of effect in its glossary, the bottom-line is that they all mean the same thing. An effect is the result of an action. The JFCOM version is different

⁸⁵ Joint Publication 3-0, GL-15.

⁸⁶ Field Manual 5-0, Glossary-8.

⁸⁷ Joint Publication 3-0, GL-24.

⁸⁸ Ibid., GL-31.

⁸⁹ Field Manual 5-0.1, Glossary-7.

⁹⁰ Joint Publication 3-0, GL-9.

⁹¹ Field Manual 3-0, Glossary-3.

in that it is more detailed, but allows for the broadness of the Army version. The end state, under both definitions, is the set of conditions that mark the accomplishment of the mission, or in other words, the commander's objectives. Again, these definitions are almost exact in meaning except for the choice of words used to define the terms.

In some instances, JFCOM and the Army use the same definition or none at all. Such is the case with the terms objective, task and center of gravity. Objective is considered to be a graphical representation of a geographical goal by the Army, while JFCOM further defines it as a "goal toward which every operation is directed," one being symbolic in nature and the other being more descriptive, but representing the same idea.⁹² Task was previously a term for use in joint doctrine, but was excluded when EBAO became accepted. Use of the word was seen as a potential obstacle in embarking on the holistic approach of EBAO and working with non-military entities that may not feel comfortable or accept being tasked.⁹³ The Army still utilizes this term, but does not define it as directing subordinates to accomplish the activity that it describes. Finally, center of gravity is accepted by both JFCOM and the Army as meaning the same thing.

D. A NEEDED FOCUS TO DOCTRINE

Change is difficult and no one likes to change the way they work when the methods used in the past are considered successful, but the change in the OE warrants change in methodology. The inclusion of EBAO does not necessarily change the processes that the Army has used in the past, specifically the MDMP process. It merely enhances and focuses the process to include more actors and tools in the goal of accomplishing the mission. Some have argued that EBAO is not as useful in the planning process because it only determines what needs to be done while the MDMP process establishes what needs to be done by whom, how and when.⁹⁴ Effects-based planning does focus on what is to be done in order to gain a certain effect, but in doing so, it also resolves how, or by what method, effects are to be achieved, who is the best element to achieve them, and when the best time is to attempt achievement. Effects-based concepts

⁹² Joint Publication 3-0, GL-24.

⁹³ Malcolm Potts, Commander, "Effects-Based Operations and Multinational Experiment 4," U.S. Joint Forces Command, J9 (Presentation, 25 October 2006).

⁹⁴ U.S. Army Futures Center, 15.

will not supplant MDMP, but will supplement it.⁹⁵ The focus on effects and a system-of-systems approach to seeing the OE complements the Army's devotion to unified action and full spectrum operations that the Army claims responsibility to in the its Operational Concept. In the past, the Army has talked about a holistic view of conducting operations in its doctrine, but didn't truly execute that way. The current wars in Iraq and Afghanistan have required the Army to re-evaluate its methods and place focus on all the elements of national power that can have an effect all the way down to the tactical level of war. EBAO is that focus. Effects may have always been a concern for commanders and staffs in the past, but accomplishment of tasks were the focal point. In his statement about EBAO, General Smith went on to state that

It's [EBAO] not completely new. Effects-based thinking has always occurred in one form or another. But it is a more formalized approach [EBAO] to how you go about building tools to help you do that.⁹⁶

JFCOM has openly acknowledged that EBAO is not new. Therefore, critics should not be surprised by the formalization of doctrine to include processes that Joint Forces and the Army have done all along.

E. APPLICABILITY TO ALL LEVELS OF WARFARE

The concept of EBO was initially only considered applicable to the strategic and operational levels of war, but with the advent of the Global War on Terrorism (GWOT) and a considerable change in the OE, came a need to change tactics to fit the enemy. This in turn resulted in the experimentation of using EBAO at the tactical level, which has proven successful in a number of units in Iraq and Afghanistan. JFCOM recognizes that effects-based concepts are applicable to the joint strategic and operational levels of conflict, but it also states that the introduction of EBAO in joint conception is "not intended to exclude the non-joint community," meaning that it is just as applicable to the services when they conduct operations alone and even more so in a pseudo-joint setting.⁹⁷ EBAO should be applied where it works and not just in places or commands that it was originally meant for.

⁹⁵ Fastabend, 11.

⁹⁶ U.S. Joint Forces Command News Release.

⁹⁷ Joint Warfighting Center, i.

Even though EBAO is more easily executed and sourced at the strategic and operational levels of command, both JFCOM, as well as the U.S. Army Joint Readiness Training Center (JRTC) in Fort Polk, Louisiana, and units in OIF and OEF have recognized the utility of it at the tactical level. These ideas have been so successful and effective to tactical units, that JRTC, through the Center for Army Lessons Learned (CALL) published handbooks outlining how EBAO can be used from the company to the corps levels.⁹⁸ These manuals were written in 2004 by professional trainers and observers at one of the premier training centers of the U.S. Army under the auspices of the clearinghouse for lessons learned throughout the Army about a concept that was being touted by senior leadership as unnecessary and unacceptable as doctrine. For the Soldiers charged with honing the skills of tactical units to write extensively on a so-called unproven method against the opinions of superiors goes to prove the importance of accepting EBAO as a viable process at the tactical level.

The tenants of EBAO are essential to any operation whether it is at an armor battalion or a combined forces command. Understanding the OE as a system of systems is critical in visualizing the complete AO. Leaving out one vital link or node can mean the difference between success and failure when considering the complex systems that company, battalion, brigade and division commanders find themselves dealing with on a daily basis. The renewed need for working within a civilian setting and conducting stability and security operations requires commanders and staffs at all levels to embrace the massive amount of information, behaviors and relationships in these environments to fully understand who the friendly, enemy and neutral forces are and how to make them do what you want without excessive force. EBAO helps identify an unidentifiable enemy (insurgents) through the execution of a holistic approach to these unconventional environments. It also prepares commanders and staffs at an earlier level on a system they will see later.

⁹⁸ CALL Handbook No. 04-14 and CALL Handbook No. 05-19, *A Special Study on Effects-Based Approach to Military Operations* (Fort Leavenworth, Kansas: Center For Army Lessons Learned, May 2005).

The implementation of EBAO at the tactical level begs the question of whether or not commanders and staffs at these levels have the capability to conduct effects-based processes and determine what effects are desired and undesired as well as how best to accomplish them. Can subordinate commands at the tactical level distinguish between accomplishing a task and creating an effect? The multiple combat rotations, extensive military education, vast combat experience and high intelligence of today's officer corps demonstrates they can. The Army's confidence in the principle of mission command also makes viable this ability of commanders to decide whether a unit should conduct one type of specified task rather than another task that would still generate the desired effect. Commanders at all levels are given responsibilities to make the right decisions and choose the right options, especially in combat. This is the mainstay of mission command theory.⁹⁹ Through the commander's intent, which according to FMI 5-0.1, "is a clear, concise statement of what the force must do and the conditions the force must meet to succeed with respect to the enemy, terrain, and civil considerations that represent the operation's desired end state," subordinate commanders and staffs can make the appropriate decisions in determining what the best course of action is in dealing with effects or tasks.¹⁰⁰ By following the commander's intent, subordinates and staffs are enabled to take the initiative during the execution phase of operations.¹⁰¹ As an example, areas like Baghdad can be very dynamic requiring that commander's intent be broad and general considering that one tactic for enforcing security in one area of the city may not necessarily be applicable across all street blocks. By allowing commanders the room to make decisions based on their understanding of the AO, success may be more easily achieved with less risk to Soldiers.

F. A METHOD FOR ALL SYSTEMS

The initial concepts of EBAO were developed to be more systemic and conformed to a particular situation. With the constant changes in the OE since 9/11, developers broadened the scope into what is now considered a way of thinking versus the

⁹⁹ Field Manual 1, 3-3.

¹⁰⁰ Field Manual Interim 5-0.1, 1-20.

¹⁰¹ Ibid., 1-20 thru 1-21.

way to do things. Because of the highly interactive complexity of the systems within the OE that commanders and staffs deal with today, EBAO has become a more dynamic process that can help enable units to better understand their environment and how the enemy, friendly and neutral forces effect that environment. Through this understanding, commanders can utilize every asset available, in conjunction with the other elements of national power, to change how the different external and internal actors are causing the systems to operate, thus creating an environment that he can control and safely operate in.

General Fastabend's argument of applying a reductionist method like systems analysis to a highly dynamic system that includes the PMESII elements as not feasible takes a very narrow approach to the idea of EBAO.¹⁰² Effects-based thinking can bridge the gap between taking a reductionist way of analyzing systems and inducing a holistic process of dealing with these systems. The understanding of the OE, for example, from the minute detail of how a city block interacts to the broad connections of the national actors, is essential to the future of warfare at all levels. The key is the need to break down these systems to determine how they interact with each other and keep these relationships in mind when deciding how best to manipulate the system from the different elements of national power - DIME. Strictly applying EBAO to the planning, execution and assessment processes will not give staffs all the answers of how to directly defeat an enemy, but by applying effects-based thinking they will better understand how to create an environment where the enemy can no longer operate, thus enhancing their ability to succeed. Just because EBAO may not apply to every aspect of conducting operations does not mean that it should be disregarded altogether. If a method supports overall mission accomplishment, it should be included in doctrine, even if it is considered optional.

G. BROADENED MEASURES OF SUCCESS

Warfare is both an art and a science. Not all aspects contributing to success can be measured precisely, but many can, and those that cannot rely on educated analysis and judgment to determine their effectiveness and performance. To infer that all elements of success or failure can be reduced to mathematical formulas is unwise. The key to being as

¹⁰² Fastabend, 10.

precise as possible, when dealing with immeasurable factors, is to be as objective as possible. MOEs and MOPs are not only determined by staff assessments and analysis, but by the commander's intent and purpose. These statements allow staffs to compare the current situation against what the commander wants to measure the successfulness of the operation. While preciseness provides more empirical proof of success, it does not guarantee success.

EBAO, contrary to what Professor Vego believes, is not an attempt to reduce warfare to a matter of mathematical methods. It introduces scientific preciseness as a part of the operational design to the dynamic environment which also relies on operational art. Measuring success can be as broad as determining if a unit is "doing the right things" that are "producing the desired effects" and if not, deciding whether "alternative actions [are] required," which is a MOE.¹⁰³ It can also be as precise as a MOP, which measures if actions were taken and if so, were they (tasks) "completed to standard, or how much effort was involved."¹⁰⁴ The latter assesses effects, does not measure task performance, is usually more subjective, and can be qualitative or quantitative, while the former is generally task-oriented at the tactical level and quantitative, being more precise and engagement specific. Even though these assessment measures are different in what they measure, they are interrelated when it comes to establishing success. One MOP may have an effect on the higher commands MOE and in some instances they may be the same measurement depending on whether the tactical unit is task-oriented or effects-oriented. The goal of assessing an operation may be to determine the effectiveness of actions, but success will not always be revealed through numbers and statistics. EBAO is not an attempt to reduce the significance of operational art, but to introduce the possibility of measuring effects and actions that were previously deemed to be immeasurable.

H. CHANGING THE CULTURE

Major shifts in doctrine usually create ripple effects of resistance and resentment by those averse to change. Sometimes it can take a whole generation before changes are accepted, and even then there are still dissenters. The introduction of EBAO has

¹⁰³ Joint Publication 3-0, IV-32.

¹⁰⁴ Ibid., IV-32

definitely gone through this trend over the past five years, but the culture is changing in the Army to include more tolerance of new ideas and concepts. Since 2003, evidence of the acceptance of EBAO can be determined by the increased number of interviews with general officers, articles written about unit operations in OEF and OIF, and lessons learned reports coming out of the GWOT concerning the use of effect-based thinking. While the Army leadership continues to resist including EBAO into service doctrine, subordinates from the corps level down are continuing to prove its effectiveness in forging success. In fact, both Majors General John Batiste of the 1st Infantry Division and Task Force Danger, and Peter Chiarelli of the 1st Cavalry Division and Multi-National Division, Baghdad in Iraq claim that EBAO was an important part of their successes in OIF.¹⁰⁵

As junior and mid-level officers become more familiar with the usefulness of including EBAO into planning and execution of operations at all levels of warfare, Army leadership will eventually be forced to acknowledge this and include these concepts into the keystone and capstone doctrine. The key to this is finalizing the effects concept into joint doctrine, which JFCOM has done in the recent publication of JP 3-0 in September 2006. The lexicon afforded by inclusion of EBAO into joint manuals should translate into eventual inclusion into service manuals, but this is only one step. Other steps will be to include effects-based thinking in all officer and non-commissioned officer schools, as well as transform staff organization into ones that can effectively and efficiently apply the basics of system-of-systems analysis and the holistic view of the OE to provide commanders with other options than purely combat operations reliant upon force-on-force engagement to defeat the enemy.

I. ACCEPTABLE ORGANIZATIONAL STRUCTURES

Most commanders would love to have more staff support with more experience to conduct 24-hour operations in a hostile environment. The reality is that there are usually not enough experienced staff officers or NCOs to go around, given the need for this vital

¹⁰⁵ Patrecia Slayden Hollis, "Task Force Danger in OIF II" *FA Journal* Vol X, No. 4 (Fort Sill, Oklahoma: U.S. Field Artillery Association, July-August 2005) 4-8 and Patrecia Slayden Hollis, "The 1st Cav in Baghdad" *FA Journal* Vol X, No. 5 (Fort Sill, Oklahoma: U.S. Field Artillery Association, September-October 2005) 3-8.

commodity in other areas of the Army. The other reality is that the inclusion of effects-based thinking into Army operations does not necessarily translate into an inflation or total reorganization of the staff from the battalion level and up or the specialty officers like the fire support officer at the company level and below. In many cases at the division, brigade and battalion level, staffs can be augmented with more support in the intelligence, fire support, and civil affairs sections, plus additional capability to extend liaison officers to adjacent organizations that make up the rest of the elements of national power. At the corps level, (possibly division, and above) staffs may need extensive augmentation to perform the tasks of EBAO.

The goal of the organization when executing EBAO, no matter what size the staff, is to ensure cross-functional coordination across the different staff sections and external organizations. The size of a staff is a reflection of the area of responsibility (AOR) that the unit commander maintains control over. The small area that battalions have responsibility for warrants a limited number of personnel in the staff. As you move up the command relationship hierarchy from brigade on, units become larger along with their staffs. The same could be said about staff augmentation for implementing effects-based thinking. Lower levels of command deal with smaller systems that have limited reach across the AOR, thus staffs need less manning to conduct EBAO. When managing a large province at the brigade or division levels, staffs need to be more robust with more senior and experienced members who are capable of maintaining visualization of a larger system-of-systems and being able to coordinate with higher level and larger numbers of external agencies. When staffs are not manned to conduct fulltime EWGs or EACs like the joint staff is, ad hoc groups of representatives can be formed to execute these functions.

J. EDUCATING THE FUTURE LEADERS AND STAFF

The constantly changing aspects of the current OE call for leaders at all levels to be as capable as ever to manage and make decisions dynamically. Leaders need to be afforded the opportunity to experience new concepts and ideas that may help them later on as they progress through the ranks. The way to prepare these new and continuing leaders for this environment and effect the Army culture that has not wholly accepted

EBAO is through leader training. As Colonel Batschelet said it in an article on EBO, “Effects-based operations demand the Army develop leaders capable of conceptual thinking” and not just procedure following.¹⁰⁶ Instead of simply being able to conduct a battle drill, they must be able to react within a highly complex system and deal with a multitude of internal and external players and factors that all have an effect on whether these leaders succeed or fail. They also must be prepared to interact with non-military and non-governmental elements that do not understand the military culture and in some cases feel threatened by military involvement. In other cases these leaders may need to deal with foreign governments, militaries and civilians, such as in OIF and OEF. All these factors require the need for a more holistic and joint approach to training leaders, both junior and senior.

These training venues must initially focus on the basics and eventually work their way towards the more complex issues. By exposing leaders to all aspects of the OE, they will be better prepared for the multifaceted AOR. Future leaders need to have a better understanding of the other elements of national power to include “domestic and international politics, culture, diplomacy and economics.”¹⁰⁷ This familiarization begins from commissioning sources like the United States Military Academy, Reserve Officer Training Corps and Officer Candidate School. At each level, from the Basic Officer Leader Course to the branch-specific Officer Basic Course and then to the Captains Career Courses, Command and General Staff College and Army War College, leaders must be developed into successfully functional components of an Army that must continue to change and progress with the changing environment.

K. SUMMARY

Both the arguments for and against EBAO can be perceived as valid depending on the context. Approaching the concept of EBAO as a valid doctrine, when it is presented as the only way to conduct operations, is not viable. Absolutes are rarely applicable to warfare. Every operation is different and should be executed accordingly. Maintaining that EBAO is applicable to every Army operation at every level of warfare is not

¹⁰⁶ Batschelet, 12.

¹⁰⁷ Ibid.

conducive to the ever-changing scope of military operations. In this chapter, I have presented arguments for how and when EBAO may be pertinent to the Army Operational Concept. The bottom-line is that effects-based thinking can be useful to better understanding operational circumstances and can provide other options for defeating enemies and stabilizing conditions, either in a military or civilian setting. The next chapter will provide recommendations for the implementation of effects-based thinking into the Army Operational Concept using the categories of doctrine, organization, training, materiel, leadership, personnel and facilities (DOTMLPF).

V. RECOMMENDATIONS AND CONCLUSION

A. INTRODUCTION

The previous chapters of this thesis have laid out the evolution and formal definition of EBAO and effects-based thinking, as well as the development of Army doctrine into what it is today, in the form of the Army Operational Concept. This thesis has taken the criticisms and potential shortfalls of EBAO inclusion and refuted or supported these arguments for the use and implementation of EBAO into current Army doctrine. The implementation of new ideas and concepts into doctrine can have major impacts on a number of areas that are essential to Army and joint operations. The focus of this chapter will be to make recommendations to the reader on how EBAO can be included in the conduct of operations from the tactical to the strategic levels of war. They are based on the potential implications of implementing EBAO into Army doctrine. These suggestions will be presented in the form of doctrine, organization, training, materiel, leadership, personnel and facilities (DOTMLPF). While not all of these elements are effected to a great extent, each one has a place in the development of emerging doctrine and must be considered when making decisions that will have a major impact on the way the Army conducts business. At the end of this chapter, I will present a brief thesis conclusion that will recommend that the Army realize what the future of warfare holds for it and implement EBAO into doctrine at all levels.

B. DOCTRINE

The impact of including effects-based thinking into Army doctrine will be minimal with the assumption that the Army has been doing this all along. The only difference will be that the processes for planning, executing and assessing operations will be more focused and formalized to include a more holistic view of the OE, better integration of all the elements of national power – DIME and more reliance on understanding effects and how task accomplishment can achieve or negate desired effects. It will also spell out more dependence on one of the fundamental aspects of the Army Operational Concept – mission command – that relies on the abilities of

subordinate commanders and staffs to make decisions based on their knowledge of the OE without formal direction from higher commands.

Now that effects-based concepts have been accepted as doctrine by JFCOM and included in JP 3-0 and 5-0, the Army should follow lead and accept its requirement to follow joint doctrine. If effects-based thinking is to be included in key joint publications for use by the joint community, which will include Army counterparts, it must be included in the keystone and capstone Army doctrine and reflect the Army's dedication to unified action and recognition that all operations in the future will be joint, interagency and multinational. This newly accepted doctrine will now alleviate much of the confusion over what EBAO truly is and the plethora of definitions that have convoluted the understanding of it. The institutionalization of effects-based thinking will preclude further confusion over what is really meant by effects.

The current version of the MDMP will not change significantly, but will be better focused on achieving effects instead of purely accomplishing tasks and will set a new standard for the planning of Army operations. Since the MDMP process is applicable to organizations from battalion to corps, it must be changed to reflect the changing nature of staff organization and responsibility. EBAO is being implemented into every command that is currently being stood up as a joint task force (JTF) in the GWOT and the majority of these commands are being pulled from the Army at the corps and division levels. Unfortunately, because EBAO is not a part of Army doctrine and is not being taught or even introduced in the Army educational system, staffs are required to be trained by elements from J7 at JFCOM and in some cases are augmented with additional planners who are well versed in the process of EBAO.¹⁰⁸ By including EBAO into the MDMP process, these staffs will have a better understanding of joint operations and the implications of effects on the conduct of war. It will also alleviate the additional training and preparation that goes into getting these staffs ready to conduct a mission that they are not normally meant to in the past. While EBAO should not replace the MDMP process, it

¹⁰⁸ Rhett Russell, Lieutenant Colonel, USJFCOM J7, Interview with author, 15 November 2006.

should supplement it and thus enhance the capabilities of future staffs in planning, executing and assessing JTF operations.

Another implication of including EBAO into Army doctrine is the familiarization that commanders and staffs, and officers and enlisted personnel will have of EBAO. The development of tasks and purposes below the JTF levels that are based on effects achievement requires that subordinates understand what the JTF commander is trying to accomplish. The only way to understand the process behind the plan development is to understand the nature of effects and the OE. By including EBAO into Army doctrine, Soldiers up and down the chain of command and levels of warfare will better understand why they are executing a task. This will, in turn, result in more effective execution and reduction of confusion in attempting to understand the overall objectives of the JTF.

The introduction of effects into the MDMP process and the Army Operational Concept is needed because it has utility at all levels of warfare. EBAO has been used in one form or another by units in OEF and OIF from the company to the corps level with great success. Two initial impression reports (IIR) conducted in the 3rd Infantry Division and 82nd Airborne Division by teams from CALL note how these units used EBAO to their advantages. These IIRs go on to recommend the Army pursue further development of the concept. One report declares that “Effects based operations is an effective method of planning, executing, and assessing operations and it should be seriously considered for inclusion into doctrine.”¹⁰⁹ Another recommends that “TRADOC should develop doctrine on how the Army uses effects based operations and how they fit into the planning process.”¹¹⁰ Other recommendations come from the previously mentioned JRTC when it published the two handbooks through CALL describing how to implement EBAO into operations at all levels of warfare within the Army construct. These recommendations

¹⁰⁹ Center for Army Lessons Learned (CALL), U.S. Army Training and Doctrine Command (TRADOC), *82nd Airborne Division Initial Impressions Report* (Fort Leavenworth, KS: CALL TRADOC, January 2003), 1-5.

¹¹⁰ Center for Army Lessons Learned (CALL), U.S. Army Training and Doctrine Command (TRADOC), *Initial Impressions Report No. 06-10: 3ID Modular Force Assessment* (Fort Leavenworth, KS: CALL TRADOC, March 2006), 6.

and evidence of the effective utilization of EBAO should not be disregarded, but should be added to the argument for doctrinal inclusion.

C. ORGANIZATION

Changing the way that operations are conducted does not necessarily mean that the structure of organizations should be changed as well, but in some cases it does. The scope of operations that an organization is responsible for controlling will ultimately determine the extent of change that is needed. The same processes that are conducted at the battalion level are also conducted at the brigade, division and corps levels, but at different scales and depth. These differences are what require adjustments in structure in order to ensure mission accomplishment at that particular level. Units that are charged with controlling joint, interagency and multinational elements must have an organization in place to do so, while units that are focused at the tactical level within a smaller AOR may not necessarily require an adjustment.

If corps and division headquarters are to be expected to operate as JTFs in the future then they should be resourced to do so. While the augmentation of these staffs by effects planners are beneficial, it does not alleviate the fact that once the organization concludes its combat rotation it will lose these additional personnel and experience that they provide. Why not create corps and division staffs that have the permanent capability to conduct effects-based thinking and eliminate the need for future augmentation? If these units are to train as they fight then they should be organized to train and fight the same way on a continual basis.

Units at the brigade and below levels do not need to be augmented with additional organic staff personnel since they are conducting the same operations within the confines of their AORs, but their organizations should be configured to take advantage of the implementation of effects. The focus on non-lethal versus lethal effects requires an element of the staff that is charged with synchronizing and coordinating all the additional capabilities that the commander now has at his disposal. This staff section is the Fire and Effects Coordination Cell (FECC), formerly known as the Fire Support Element (FSE), and is led by the Effects Coordinator (ECOORD), formerly known as the Fire Support Coordinator (FSCOORD). The Army has gone back and forth on the naming convention

of this group from FSE to FECC and back to FSE. Adding an additional duty to the fires elements of these organizations does not take away from their ability to conduct fire support operations, but capitalizes on their ability to synchronize effects to accomplish the commander's intent and ensure that all the different elements of effects are included in the planning and execution process.

The key to developing an organization that is effective and efficient and can conduct required processes in a timely manner is to understand what works and what does not work in the field. Lessons learned and recommendations from units in OEF and OIF should be carefully evaluated and considered for potential changes in staff structure. The end result should be an organization that is properly resourced to carry out assigned tasks, but not overly inflated with additional infrastructure that hinders staff operations.

D. TRAINING

Proficiency in execution is a result of the practice of tasks to standard. Acceptance of EBAO as doctrine will require the Army to adjust the mission essential task lists (METL) of the units that it affects. These METLs will need to reflect the additional processes that EBAO will create within the staffs. By continually rehearsing these new steps of the MDMP, staffs at all levels will remain familiar and proficient in the execution of effects-based thinking and will require much less train-up time in preparation for future combat operations.

The introduction of a holistic approach to understanding the OE and using the DIME elements of national power to affect that OE will require staffs to train with joint, interagency and multinational partners to ensure that they are prepared to conduct actual operations in a theater of war. Because of the issues with training staffs with a limited number of actual assets that make up non-Army and non-military actors within the OE, training centers like the National Training Center (NTC), JRTC and the Battle Command Training Program (BCTP) will need to duplicate these elements in order to put the staffs through the rigor of coordinating a unity of effort. When possible, actual representatives from these other areas should be included in training exercises with the use of actors being a last resort. Authenticity should be a focus of these exercises so that trainees get the most out of them while gaining much needed experience.

E. MATERIEL

Very little additional materiel is needed when implementing EBAO. One misperception is that the effects-based assessment process requires massive amounts of information that is cataloged and correlated through the use of computer technology that provides visualization of the OE, collaboration between staff elements and synchronization of the different efforts used to achieve effects. The EBAO process can be conducted just as the MDMP process is, with pen and paper. While elaborate computerized models and visual effects might help in the process, they are by no means necessary. The current collaboration tools and databases within the Army Battle Command System (ABCS) could prove useful in execution of EBAO. These ABCS systems are utilized by all staffs from battalion up and are effective in sharing information and providing a common operating picture to both superiors and subordinates. Even though the development of new systems is not required for EBAO, current off the shelf systems will enhance the ability of staffs to coordinate efforts.

Where advances need to be made in the areas of collaboration and synchronization is when dealing with non-Army/military groups that staffs must combine efforts with on the battlefield. Systems need to be developed in order to easily and securely share information with these elements that are not normally prepared to operate in a secure information environment. Until such a system is emplaced, the use of liaison teams will fill the void. Unfortunately, these teams may need to be taken out of current structure unless the Army is prepared to temporarily grow organizations that are capable of accomplishing this task.

F. LEADERSHIP

The success of EBAO implementation rests on the belief of leadership in the concept and the inclusion in the Army education system. These steps will result in the institutionalization of effects-based thinking and full acceptance into doctrine and training. This institutionalization should begin from the time an officer pins on second lieutenant bars and should gradually progress throughout his or her career.

New officers should, at a minimum, be introduced to EBAO when he or she enters the newly founded Basic Officer Leadership Course (BOLC). As they progress

through their careers and attend additional military educational courses such as branch specific Officer Basic Courses (OBC) and Captains Career Courses (CCC), Intermediate Level Education (ILE), and the Army War College (AWC), officers should gain better understanding of how EBAO works and how it relates to the conduct of operations at all levels of warfare. Officers should gain familiarization at BOLC and OBC and then begin to learn the process when they are taught MDMP at CCC. As they continue to ILE they must learn how to become joint staff officers able to be assigned to a JTF and function effectively. Only by continued education and experience will the Army be able to produce the future leaders and staff officers that are able to execute effects-based thinking and conduct planning, execution and assessment at any level of command, to include JTF. Even though officers at the platoon and company may not vary from the TLPs, they must understand how and why their higher commands use EBAO. By understanding how effects translate into tasks or subordinate effects, junior officers will be in a better position to accomplish their assigned tasks or effects to achieve the desired effects laid out by higher headquarters.

EBAO is currently taught at the Joint Professional Military Education (JPME) level II, but the problem is that few Army officers receive this type of education before they are assigned to joint staffs or staffs at the division level and above. Current Army education must do a better job of ensuring that junior to mid-grade officers receive the proper tools and knowledge to prepare them for the many staff positions that they will fill in their future careers.

G. PERSONNEL

The prospect of additional personnel goes hand-in-hand with the growth of organizational staffs that are expected to become something that they were not initially designed to be, such as the division headquarters becoming a JTF enroute to OEF and/or OIF. Depending upon the OE that staffs at the brigade and below are operating in determines whether or not staffs need additional augmentation of planners and other staff officers. Normally at these levels, additional personnel are not needed, but at division and above additional personnel are needed given the increased size of the AOR they are given and the increased size and elements of the system of systems that they are dealing with.

H. FACILITIES

The implementation of EBAO into Army operational doctrine has no significant impact on the need for additional facilities. Current facilities are adequate in the training and conduct of exercises used to test and evaluate staffs in their proficiency of EBAO. The same aids used in the conduct of MDMP and other staff operations can be used when adding effects-based thinking.

I. FURTHER RECOMMENDED STUDY AND RESEARCH

Further study is required if one declares that effects-based thinking is applicable to Army operational doctrine and the MDMP process. Studies are required on how units in OEF and OIF use effects to their advantage and how they include EBAO into their planning, execution and assessing processes. Doing so will assist in determining how the MDMP process can be restructured to better reflect the evolution of the Army Operational Concept into a more holistic, effects-based methodology.

Analyzing the use of current and future network capabilities will create a more holistic view of the OE. Using current technology to conduct SoSA could potentially enhance the staff's ability to develop needed effects and could minimize the time it takes to plan their efforts. Technical testing and evaluation, by collecting multiple data and determining how the process can be manipulated to produce the best data, can also work for doctrine development.

Future students in military arts and science, as well as the concepts and doctrine directorates within the Army should focus effort on how EBAO can best be used within the service. This is a better approach than ignoring EBAO. Open minds need to embrace these ideas, fully study the problem and develop possible solutions before giving up and relying on what has historically worked in past eras. Only through further study and research will EBAO be accepted as doctrine.

J. CONCLUSION

The evolution of effects-based thinking from EBO and EBAO has proven to be a difficult struggle in the progressive development of future Army operational doctrine. Attempts to broaden concepts that were initially meant for the Cold War environment have been met with much criticism and rejection from the Army. Most of these criticisms

are based on misunderstanding of definitions, culture and complexity. Effects-based thinking provides a capability to commanders and staffs at all levels to react to the constant changes to the OE. If the OE is understood as a set of interconnected, interrelated systems, such as PMESII, it will also be understood that there requires more than a military solution. The OE can be compared to how a balloon operates. When pressure is applied to one side of the balloon, unless with a sharp object, the balloon does not break, it changes shape. In order to compress the balloon, pressure must be placed all around it. During the Cold War and earlier it was thought that the U.S. could “win” by defeating adversaries militarily through seizing capitals and declaring victory. This military on military strategy works when the military is the primary “ways and means.” The challenge arises when adversaries do not use a military as the primary means to achieve victory while the U.S. does. This results in a mismatch in both ways and means. EBAO works to balance the mismatch and bring all the elements of national power to bear on the adversary.¹¹¹

The Army should take advantage of the emerging joint doctrine of an effects-based framework and capitalize on its utility in operational doctrine. Including EBAO into the MDMP process will enhance a staff’s ability to plan, execute and assess operations in an ever-changing OE, complicated by an interconnected and dynamic system of systems. Ironically, units in combat have done much to adapt to this new environment. Now is the time to formalize and institutionalize these efforts. After all, tactical commanders are applying EBAO without doctrine. The recognition that doctrine must evolve as a result of these changes and the ability of subordinate commands and staffs to determine the best approaches in achieving desired effects will prove successful in the current wars in Iraq and Afghanistan. These new concepts will not change the way the Army operates, but will focus DIME efforts and make them available to the commander and staff. Conflicts in the future will be joint efforts requiring Army forces at all levels to consider joint, interagency, and multinational actors during operations. The Army can no longer conduct operations within a vacuum that only focuses on the “M” in

¹¹¹ Stephen Runals, USJFCOM Standing Joint Forces Headquarters (Core Element) (SJFHQ(CE)), Interview with author, 16 November 2006.

DIME. It must pave the way ahead with emerging ideas that have proven effective in the GWOT and address the ever-changing aspect of warfare by including EBAO into Army operational doctrine.

LIST OF REFERENCES

- Batschelet, Allen W. Lieutenant Colonel, "Effects-Based Operations for Joint Warfighters," *Field Artillery* (May-June 2003): 10.
- Bingham, Price T. "Seeking Synergy: Joint Effects-Based Operations," *Joint Forces Quarterly* (Spring 2002): 58.
- CALL Handbook No. 04-14. *Effects-Based Operations: Brigade to Company Level*. Fort Leavenworth, Kansas: Center for Army Lessons Learned, July 2004.
- CALL Handbook No. 05-19. *A Special Study on Effects-Based Approach to Military Operations*. Fort Leavenworth, Kansas: Center for Army Lessons Learned, May 2005.
- Center for Army Lessons Learned (CALL), U.S. Army Training and Doctrine Command (TRADOC), *82nd Airborne Division Initial Impressions Report*. Fort Leavenworth, KS: CALL TRADOC, January 2003.
- , *Initial Impressions Report No. 06-10: 3ID Modular Force Assessment*. Fort Leavenworth, KS: CALL TRADOC, March 2006.
- , *OEF/OIF CAAT Initial Impressions Report*. Fort Leavenworth, KS: CALL, TRADOC, December 2003.
- Cheek, Gary H. "Effects-Based Operations: The End of Dominant Maneuver?" In *Transformation Concepts for National Security in the 21st Century*. Edited by Williamson Murray. Carlisle: Strategic Studies Institute, September 2002, 73-100.
- Curran, John M. Lieutenant General, U.S. Army, "MEMORANDUM FOR SEE DISTRIBUTION, SUBJECT: Effects Based Concepts and Doctrine in Army Education," Headquarters United States Army Training and Doctrine Command Futures Center, 22 December 2005, 2.
- Darwin, Charles "The Origin of Species," *The Harvard Classics*, Edited by Charles Eliot. New York: P.F. Collier & Son Corporation, 1956, 87.
- Department of Defense. *Quadrennial Defense Review Report*. Washington, D.C.: Department of Defense, 6 February 2006.
- Ellsworth, James B. "To the Editor," *Joint Forces Quarterly* 42 (3d quarter 2006): 6.
- Fastabend, David, Major General, "EBO and the Classical Elements of Operational Design," U.S. Army Futures Center, Training and Doctrine Command (Presentation, January 31, 2006).
- Field Manual 1. *The Army*. Washington, D.C.: Headquarters, Department of the Army, 14 June 2005.
- Field Manual 3-0. *Operations*. Washington, D.C.: Headquarters, Department of the Army, 14 June 2001.

- Field Manual 5-0. *Army Planning and Orders Production*. Washington, D.C.: Headquarters, Department of the Army, 20 January 2005.
- Field Manual 6-0. *Mission Command: Command and Control of Army Forces*. Washington, D.C.: Headquarters, Department of the Army, 11 August 2003.
- Field Manual Interim 5-0.1. *The Operations Process*. Washington, D.C.: Headquarters, Department of the Army, 31 March 2006.
- Hollis, Patrecia Slayden. "Task Force Danger in OIF II," *FA Journal* Vol X, No. 4. Fort Sill, Oklahoma: U.S. Field Artillery Association, July-August 2005.
- . "The 1st Cav in Baghdad," *FA Journal* Vol X, No. 5. Fort Sill, Oklahoma: U.S. Field Artillery Association, September-October 2005.
- Joint Publication 3-0. *Joint Operations*. 17 September 2006.
- Joint Warfighting Center, U.S. Joint Forces Command. *Commander's Handbook for an Effects-Based Approach to Joint Operations*. Suffolk: U.S. Joint Forces Command Joint Warfighting Center, 24 February 2006.
- Malcolm, Ben S. *White Tigers*. Washington, D.C.: Brassey's, Inc., 1996.
- Murray, Williamson. "Transformation: Volume II." In *Transformation Concepts for National Security in the 21st Century*. Edited by Williamson Murray. Carlisle: Strategic Studies Institute, September 2002, 1-23.
- Murray, Williamson, and Kevin Woods. *Thoughts on Effects-Based Operations, Strategy, and the Conduct of War*, IDA Paper P-3869. Alexandria: Institute for Defense Analyses, January 2004.
- Pace, Peter. Memorandum from the Chairman of the Joint Chiefs of Staff, *2006 Joint Professional Military Education (JPME) Special Areas of Emphasis (SAEs)* dated 17 January 2006.
- Potts, Malcolm, Commander. "Effects-Based Operations and Multinational Experiment 4," U.S. Joint Forces Command, J9 (Presentation, 25 October 2006).
- Romjue, John L. *American Army Doctrine for the Post-Cold War*. Fort Monroe, Virginia: United States Army Training and Doctrine Command, Military History Office, April 1996.
- TRADOC Pamphlet 525-3-0. *The Army in Joint Operations: The Army's Future Force Capstone Concept 2015-2024 Version 2.0*. Fort Monroe, Virginia: Department of the Army, Headquarters, United States Army Training and Doctrine Command, 7 April 2005.
- U.S. Army Futures Center, "History and Pathways of the Effects-Based Approach (EBA) to Joint Operations." Powerpoint presentation obtained from COL Steve Bullimore, U.S. Army Capabilities Integration Center on 8 August 2006.

- U.S. Joint Forces Command, "Media Availability at the Conclusion of Multinational Experiment 4," News from USJFCOM, 19 May 2006. News release online. Available from <http://www.jfcom.mil/newslink/storyarchive/2006/sp051906.htm>; Internet; accessed 1 November 2006.
- Van Riper, Paul "Concerns" E-mail to General Peter Pace, General Michael Hagee and General Peter Schoomaker, 11 December 2005.
- Vego, Milan N. "Effects-Based Operations: A Critique," *Joint Forces Quarterly* 41 (2d quarter 2006): 51.

THIS PAGE INTENTIONALLY LEFT BLANK

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, VA
2. Dudley Knox Library
Naval Postgraduate School
Monterey, CA
3. Mr. William Shugrue
U.S. Army Training and Doctrine Command
Army Capabilities Integration Center
Fort Monroe, VA
4. LTC Rhett Russell
U.S. Joint Forces Command
J7
Suffolk, VA
5. Lt Col Brad Borman
U.S. Joint Forces Command
J9
Suffolk, VA
6. Mr. Stephen Runals
U.S. Joint Forces Command
Standing Joint Forces Headquarters (Core Element)
Naval Station Norfolk, VA
7. Mr. Clint Ancker
U.S. Army Combined Arms Command
Combined Arms Doctrine Directorate
Fort Leavenworth, KS
8. U.S. Army Field Artillery School
Directorate of Training and Doctrine
Fort Sill, OK